Chairs

Institute of History of Art, Architecture and Urbanism
Delft University of Technology – Faculty of Architecture

Chairs

The Delft Collection

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Introduction

To aficionados, a book bearing the simple title of *Stoelen* (Chairs) functions as the primary source of information on the collection of chairs belonging to the Faculty (formerly Department) of Architecture at Delft University of Technology. There were at least two editions of this book: one edited by Harm de Jong and published in 1974, and a second published by Delft University Press in 1980. Although the collection was the point of departure for both of these books, the publications were also supplemented by interesting designs that did not belong to the collection itself. Unfortunately, in the last few years these publications have only been available in antiquarian bookshops.

For a lengthy period of time, the collection was managed with varying degrees of attentiveness, depending on the people involved, but it generally led a marginal existence. Recently, however, the necessary steps have been taken to generate a favourable climate for the continuing existence of the collection. New accommodation has been arranged with the aid of the Mondriaan Foundation, and all the chairs have undergone conservation treatment. In 2002, the collection was entrusted to the Institute for History of Art Architecture and Urbanism, IHAAU.

The renewed vigour applied to the collection has resulted in additional acquisitions in the form of loans and donations from companies and private parties. Moreover, a number of older chairs from the Sluyterman collection have been added to the collection. The expansion of the collection, improved dating and attribution, and the urge to manage the collection in a more active manner were all reasons to issue a new publication with the aim of bringing the chairs to the attention of the general public once again.

In this book, you will not always find the design classics with which you may be familiar from books on modern design, or splendid antique items that are on display in museums. But you will become acquainted with a collection of furniture that illustrates what it actually means to be a designer. The collection was initiated with the objective of supporting design education, and this goal is reflected in the collection criteria: material use, construction, and user typology. These have ensured that the collection has acquired an extremely diverse and unique character down through the years. This means that it is not only oriented toward the major names from design history, but it also devotes attention to unique items and user objects that have also become popular among the general public in the course of time, such as a simple knob chair from Brabant, a folding fishing stool, or a plastic bucket seat.

Various periods and styles are represented in the collection. Two focal points can be discerned. The first consists of the 18th and 19th-century seats, such as, for example, an ensemble of Russian folklore furniture that can be regarded as being among the most splendid examples of their kind. The chairs from the Modernist period – particularly the tubular steel chairs and aluminium chairs – form the second focal point.

Besides these areas of focus, other subcategories can also be distinguished. On the basis of the above-mentioned collection criteria, the viewer can admire a large number of synthetic chairs, such as the two garden chairs created by Frog Design, the children's chair designed by Marco Zanuso and Richard Sapper in 1964, and the *Plona Chair* designed by Giancarlo Piretti in 1969. It will be self-evident that the *Knotted Chair* by Marcel Wanders, which was produced after a workshop at Delft University of Technology, is also included in the collection. In addition, there are various baby chairs, African milking stools, simple farmer's chairs, and other extraordinary sitting elements to be admired. In short, the assortment is rich enough to fascinate the design buff or creative designer who wishes to know more about the chairs one does not encounter in everyday life but which have certainly influenced our living environment. This variety of chairs is presented to the reader in line with the type of material that has been used: wood, metal, natural material (including wickerwork), and synthetic material. The same classification was applied to the previous Delft publications. This choice was occasionally rather arbitrary, because a chair might contain two types of material. In such cases, the material that largely determined the character of the chair was taken as the basis. Within each category, the chairs have been arranged according to their construction or method of production and, in specific cases, according to their use. The authors of the book have attempted to gather as much information as possible on the objects and to place them in the context of local, personal and historical developments. This quest has occasionally led to unexpected destinations, such as the Musée d'Orsay in Paris, the Paulus en Petrus Kerk (church) in Middelburg, or the convent archives in Sint Agatha. This often generated a feeling of 'upgrading' when another piece of the puzzle fell into place and a year, designer or excerpt from the creative history could be added to the database. The authors hope that the improved documentation of the chairs and the accompanying texts will stimulate the pleasure of reading as well as a better understanding of the composition of the collection.

In the description of the chairs, the designer's name is the first piece of information given. Subsequently the type of chair is listed, with its given name if possible, and then its date. This dating process distinguishes between the date of design, the date of manufacture, and the 'age' of the object in the collection. In this way, any difference between the initial design and a later implementation or reissue can be made clear. The next item is the inventory number.

The dimensions of the chair are presented in centimetres – a smaller unit is useless because the chairs can never be identical down to the last millimetre. Nevertheless, the tube diameters of the metal chairs are given in millimetres. The order of sequence of the figures presented is: the height of the seat, the absolute height, the width, and the depth. The data on the manufacturer usually contain the location of the company or maker and the model designation. If no literature is known, any further designation is omitted. The information concludes with further remarks on the object.

The history of the collection

In 1957 three students, Jelle Jelles, Gerrit Oorthuys and Kees Albers, came up with the idea of compiling a collection of chairs that could be used during design educational activities. Supported by the Faculty, particularly the Interior Design section, a collection of more than one hundred items was amassed within a few years. Many chairs were purchased at the Waterlooplein open-air market and at other second-hand markets. At that time, it was still possible to find a forgotten design chair among the displayed articles, which was one of the favourable sides of the advent of fashions and trends in interior design. Direct negotiations were also opened with manufacturers and designers. Other chairs were obtained via acquaintances, clearances of old premises, and donations.

One of the most extraordinary donations came from Gerrit Rietveld in 1964. On hearing of the initiative concerning the chairs collection, he decided to donate a number of his chair designs to the Faculty. Taking the Faculty's selection criteria into account, Rietveld donated six chairs, each of which was based on a different construction principle. Since then, the Faculty has been the proud owner of the aluminium chair made from a single aluminium plate, created on the basis of a design from 1942, the *Danish Chair* dating from 1946-1950, a large tubular frame chair (the renowned 'beugelstoel') with armrests, dating from 1927, a crate chair ('kratstoel') from 1934, a stick chair ('stokkenstoel') from 1924, and a military chair from 1932. Unfortunately, the *Red and Blue Chair* included in the collection is a copy, not an original. The Rietveld chairs are often lent out for exhibitions at home and abroad.

An important extension took place when the sitting furniture from the Sluyterman collection was adopted into this collection of chairs. T. K. L. Sluyterman, Professor of Decorative Arts at Delft Polytechnic, was a passionate collector and brought together a large and varied collection of art and applied art objects between 1895 and 1920. He acquired a part of his collection when performing research for his publications entitled *Oude binnenhuizen in Nederland* (Old Interiors in the Netherlands), dating from 1908, and *Huisraad en Binnenhuis in Nederland in vroegere eeuwen* (Household Goods and Interiors in the Netherlands in Previous Centuries), dating from 1918. These were the first two general reviews in this field in the Netherlands, and they are still used as reference works by restorers and collectors.

This extension defined the contours of the Chairs collection as it is nowadays. Besides the modern 20th century chairs, a large part of the collection is comprised of 18th and 19th-century sitting furniture.

From basement to depot

In 1970 the Faculty of Architecture moved to the new Bakema faculty building at no.1 Berlageweg in Delft. The Chairs collection also had to move and was accommodated at various locations, eventually ending up in the antiques basement of the Faculty, which did it no good at all. The poor climate in the basement allowed dust, insects and fungus to thrive. In addition, it was difficult to take good care of the collection: the chairs shared the space with several other collections, and the basement itself was used by various groups as a general storage area, which also impeded access to the collection.

This all changed in 2000, when all the university collections were gathered together under the auspices of the *Techniekmuseum* (Museum of Technology). The chairs remained in the co-administration of the Faculty, which was responsible for suitable accommodation. The IHAAU, the history section of the Faculty, assumed responsibility for the management of the collection.

In 2003, the Chairs collection finally received the accommodation it deserved. Thanks to backing from the Mondriaan Foundation via a fund for university collections, the Faculty was able to equip a depot with custom-made filing cabinets and an air-conditioning installation. The modern chairs have been accommodated here, while the older chairs, which are kept in the Museum of Technology, have been housed under similar circumstances. Prior to their relocation to the new accommodation, the chairs were first passively conserved; in other words, they were cleaned. As a precaution, all the wooden chairs were sent to Isotron in Wageningen, where they were treated in a radiation chamber to rid them of any vermin or fungus. In conjunction with the Museum of Technology, the database of the collection was digitized. Nowadays, the chairs are safely tucked away in the depot again, safe from any adverse influences from humans, fungus or vermin. The air-conditioning system keeps the space free of dust and moisture.

Recent acquisitions

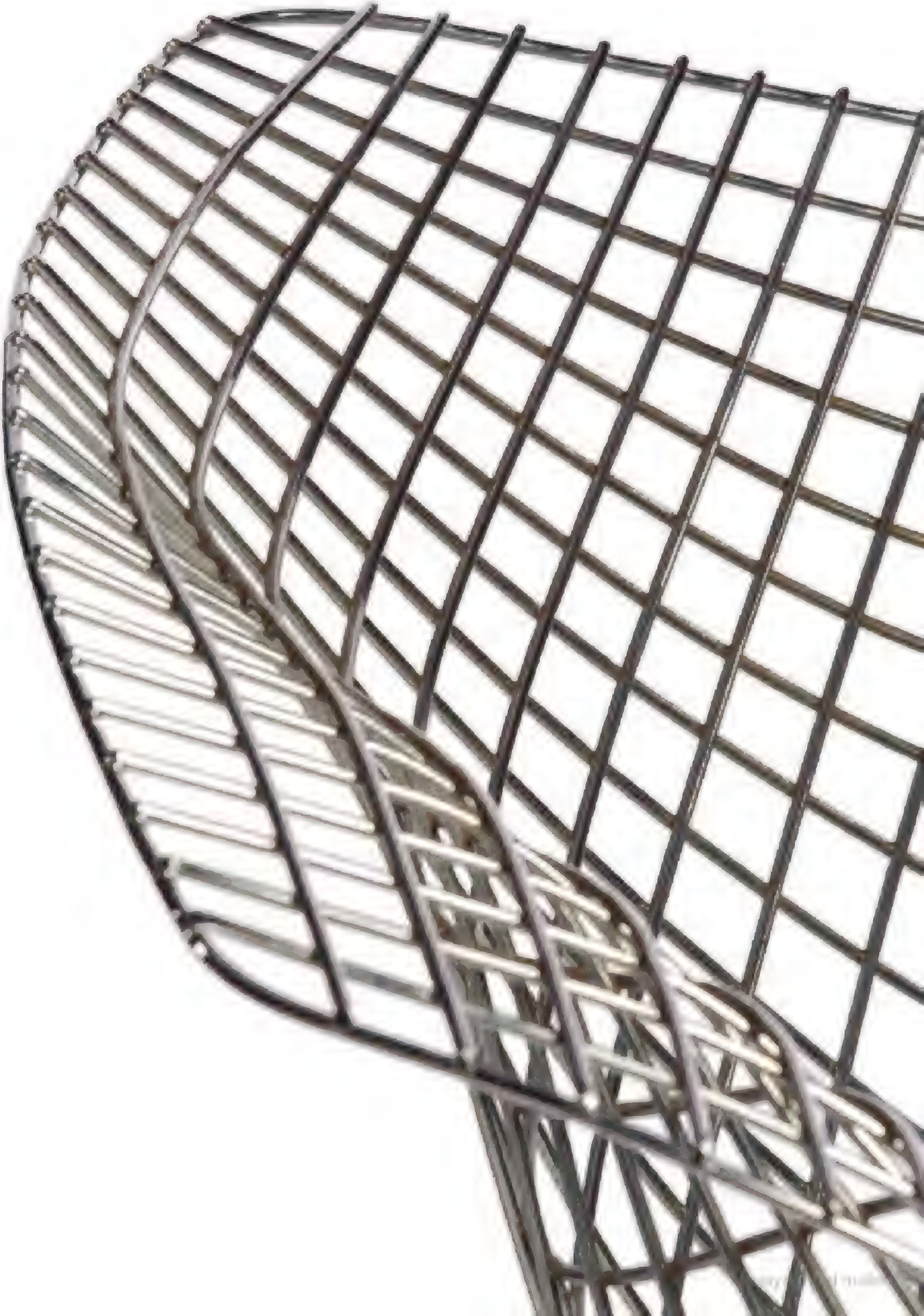
In 2003, a loan contract with the Netherlands Architecture Institute (NAI) was agreed. As a consequence, the collection was expanded with a collection of chairs designed by Dutch architects such as H.P. Berlage, J.J.P. Oud, Jan Wils, and Auke Komter. This occasion formed the basis for the exhibition entitled *Hollands Degelijk* (Sound Dutch) at the Faculty of Architecture in September 2003. This exhibition combined the NAI chairs with those of the Faculty. This event, along with other activities, again drew the attention of the general public to the collection of chairs.

Renewed interest in the Chairs collection led to a number of donations. Surviving relatives of the Dutch architect Ida Falkenberg donated two prototypes of rattan furniture; an architect sold a monumental seat by Jan de Jong, an architect from the Bossche School, to the Faculty for a symbolic amount. And that was merely the beginning. Due to an active acquisition policy, the collection has continued to grow in the past few years. A former student at the Faculty of Architecture donated the *Plona Chair* by Giancarlo Piretti, a former member of staff at Delft University donated a chair by Ingmar Relling, a publisher donated a Willy Guhl garden chair made of eternite plate, and so on. In 2006, the last director of the CAR furniture factory in Katwijk donated six chairs from its collection. This batch comprises a terrace chair designed by A. T. Ruigrok and dating from 1934, three designs by Kho Liang Ie, including the renowned *Triangle Chair*, and a prototype of a terrace chair consisting of a steel frame to which red synthetic strips were click-fastened. Including the newly acquired chairs, the Faculty collection now comprises more than 260 items. Donations are an important form of acquisition, due to the fact that the resources for university collections are generally rather modest.

The future

Down through the years, the collection has played a prominent role in Architecture education. The Freehand Drawing, Form Studies, and Interior Architecture sections of the University actively used the collection in their programmes. Reference to the chairs was made in lessons on proportion and construction, and also in design practice where students have to design their own chair (in this way, some of these chairs have even managed to gain a place in the collection). In freehand drawing classes, the chairs served as models. However, the chairs are not used in education as much as they used to be. The publication of the Chairs Book should ensure that students are again stimulated to explore modern materials and construction techniques and to apply these in their designs. In addition, there are also plans to set up a permanent exhibition location for the chairs in the Faculty.

Hans Beunderman, the former Dean of the Faculty, assumed the role of protector of the collection in the critical years. The present Dean, Wytze Patijn, also recognizes the added value of the collections that the Faculty has gathered for educational purposes over the past few decades. In comparison to other university collections, some of which are on the verge of extinction, the Chairs collection appears to have a bright future – although this future suddenly seemed to have gone up in smoke when fire broke out at the Faculty of Architecture at Delft University of Technology on Tuesday 13 May 2008 and the collection appeared to have been destroyed. The disaster brought the chair collection great national prominence, albeit undesired, when journalists seized the opportunity to chart the magnitude of the disaster and to specify which valuable items had apparently been lost. It soon turned out, however, that the entire chair collection had survived the blaze. A bright future in a new faculty now lies on the horizon.



Metal

Some wooden chairs in the collection are significantly older than the oldest metal chair. However, this does not mean that there were no metal chairs prior to 1925. Examples of wrought-iron or bronze chairs are known from Antiquity. These were usually in the shape of folding chairs – although they might not always actually be foldable – and were generally used for ceremonial purposes. In Ancient Rome, this type of chair, based on the hinge principle, was called *sella curulis* – a seat for a higher function.[1] This tradition continued throughout the Middle Ages and this type was favoured by ecclesiastical dignitaries of the time. From the 16th century onward, metal chairs were often equipped with back and armrests, and more attention was devoted to their decoration. Real progress in the domain of metal seats came with the advent of improved cast-iron technology at the end of the 18th century. The 19th century was a period of expansion, especially for cast-iron, wrought-iron, and round-bar chairs and benches, for both interior and exterior use. This development was enabled by the Industrial Revolution, of which iron and steam were the characteristic features, and the technologies applied to produce and process iron underwent enormous improvement in this period.

Nevertheless, when the young Marcel Breuer attempted to assemble his first modern tubular steel chair, the situation in furniture usage had changed. By 1925, metal furniture had long been exiled to the garden, the hospital, the barracks, or an open-air café; at least that was the case in Europe. A normal home contained only an iron or brass bed at the most. The step that Breuer took in Dessau was a revolutionary reintroduction of metal into the living room. His armchair was made of eleven pieces of cold-drawn steel tube, curved into the required shape on the bending bench. The tubes were nickel-plated so that they shone. A fabric known as 'two-cord yarn', which was actually canvas treated with wax, was used for the seat and the backrest. The result was a stripped skeleton of a club chair. Instead of a single volume, it was a composition of lines and surfaces.*

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Two features of the new era in metal living-room furniture were of importance: the link of the new design to avant-garde architecture, and the use of tubular steel. Although Breuer's idea to design a 'stripped' transparent armchair had been inspired by Rietveld, transparency was also one of the general characteristics of the modern interior. An abundance of light, clarity, and frugal furnishings were typical features of the austere functionalist interiors of the late 1920s. Only chairs that did not form spatial obstacles harmonized with this kind of interior. In 1928, in his text entitled *Metalmöbel und die*

[1] G. Himmelheber, *Möbel aus Eisen. Geschichte Formen Techniken*, Munich 1996, p. 11.

Moderne Räumlichkeit (Metal Furniture and Modern Spatiality), Marcel Breuer described 'the tubular furniture as necessary apparatus for contemporary life', and characterized tubular furniture as '...luftig durchbrochen, sozusagen in den Raum gezeichnet...' ('light open work, in other words, drawn in space').[2] Initially, new metal furniture could only be found in avant-gardist surroundings. Gropius's new Bauhaus in Dessau was furnished with Breuer's first steel models, and the show houses of the *Weissenhofsiedlung* (Weissenhof Estate) which were presented at the *Werkbundtentoonstelling* (exhibition organized by the German Association of Architects, Designers and Industrialists) in Stuttgart in 1927, assigned tubular steel chairs a prominent place. Breuer, Korn, Mies van der Rohe, Oud, the Rasch brothers, Van Ravesteyn and Stam displayed their own chairs in the show houses, while the Swiss Haefeli presented his *Elektron Chair* made of an aluminium alloy. However, it was only in around 1930 that tubular furniture began to become fashionable, and from that moment on the direct link to avant-gardism diminished.

The use of an iron tube in the manufacture of chairs is a technique that has been known since the end of the 19th century. Chairs with a lacquered or varnished tube and with a wooden seat and backrest were made for institutions such as hospitals, for example. But the use of a steel tube was completely new. Breuer was inspired by his new Adler bicycle and wrote to the bicycle factory requesting metal tubes. Apparently the people at Adler thought that Breuer's idea of making chairs from steel tubes was nonsense, and he received no response. Then Breuer approached the Mannesmann Company, a well-known manufacturer of steel tubes, and this firm delivered the required items. It was a cold-drawn tube, and according to the legend it was the 'Prezisionsrohr', a tube with little tolerance in dimension fluctuation. Cold-drawn tubular steel retains its elasticity, which enables the springy effect with chairs that have no back legs, so-called 'cantilever chairs'. Welded tubes would have been cheaper but were substantially less flexible. The tube was originally nickel-plated but by 1930 most chairs were chromium plated or lacquered, and the treatment always resulted in a higher price in comparison to wooden chairs. In this treatment, several layers of copper and nickel, for example, were applied to the tube, before the final chrome layer was applied. The polishing of the welding seams was also expensive, because it involved manual work.

The fact that avant-garde designers had a preference for tubular steel is not surprising. It was a new material for chairs, it was a standardized industrial product, and the cold glint of the reflecting chromium layer harmonized with the austere, almost clinical interiors of the time. The fascination for the new

[2] M. Breuer, 'Metallmöbel und die moderne Räumlichkeit', *Das Neue Frankfurt*, 1928, no. 1, p. 11.

material is admirably expressed in the polemic that Charlotte Perriand had with the Brit John Gloag. Gloag rejected the use of the new material, to which Perriand reacted as follows: '… Aesthetic value. Metal plays the same role in furniture as cement in architecture. It is a Revolution. Aesthetic of Metal. … Unity in Architecture and yet again Poetry. A new lyric beauty, regenerated by mathematical science …'.[3] Ironically, Breuer, as head of the furniture workplace at the Bauhaus, had no experience of working with metal; only wood was used there. His tubular furniture was not created at the Bauhaus. To acquire the necessary expertise, he went to the Junckers aircraft factory in Dessau, where the employees had experience with metal-working and with the manufacture of metal aircraft seats. Breuer worked on his very first chair with the foreman in the workplace there.[4]

This first chair was inspired by Rietveld; the clear additive construction is a translation of the *Red and Blue Chair* in metal. But Breuer's next item of furniture, the stool, has a shape that emanates from the properties of the material: a curved tube in one continuous line. With this, Breuer determined the direction for tubular steel furniture design.[5] Instead of welding pieces of steel tube, or of screwing them together, use could be made of the flexibility of the steel tube in order to capture the form in a single tubular line. This was not always possible, and certainly not with chairs with armrests, but in such cases, the designers aimed at combining two lines. One of the most pregnant examples of the line principle is Mart Stam's cantilever chair, where the form is expressed in a single continuous line. Even the judges, who had to come to a decision in trials dealing with the copyright to legless chairs, found that the essential feature of this chair was '... die strenge und folgerichtige Linienführung, die unter Vermeidung jedes überflüssigen Teiles in der knapsten Form mit den einfachsten Mitteln die moderne Sachlichkeit verkörpert.' (… the strict and consequent linearity that with the avoidance of every superfluous component incorporates the modern functionality in the most sparse form with the simplest resources),[6] in the words of the Berlin court in 1931. Initially, this design principle led to straightforward and austere designs, but after 1930, when such items of furniture became fashionable, it led to complex tubular compositions, which made Mart Stam grumble about 'impossible macaroni-like steel monsters'. [7]

The 'mannerist' development in the thirties was partly due to the fact that the prototypes of the tubular steel models had been developed prior to 1930, so that the growing demand for new models led to variations and sophistication. The rising demand also stimulated new manufacturers – as well as conflict about the production copyrights.

[3] C. Perriand, 'Wood or metal?', *The Studio*, Vol. MCMXXIX (1929), p. 279.

[4] TECTA & Stuhlmuseum Beverungen (ed.), *Marcel Breuer erfindet den Stahlrohrstuhl. Ein Gespräch von Helmut Erfurth mit Fritz Müller*, Cologne 2002.

[5] See J. van Geest & O. Máčel, *Het museum van de continue lijn*, Amsterdam 1986.

[6] Quoted after O. Máčel, *Der Freischwinger. Vom Avantgardeentwurf zur Ware*, Delft 1992, p. 57.

[7] [M.Stam], 'De stoel gedurende de laatste 40 jaar', *de 8 en Opbouw*, 4 (1935) no. 1, p. 7.

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p. 73

The tubular chairs were soon followed by designs based on steel strips, one of which is the renowned *Barcelona Chair* by Ludwig Mies van der Rohe. The production of the metal sheet chairs for open-air café use continued successfully.* However, experiments with cast chairs, such as the *Elektron Chair* by Max Ernst Haefeli, dating from 1927, were scarcely emulated. The use of aluminium as a construction material for furniture was a new feature. In contrast to the situation in the United States, furniture made of aluminium was not common in Europe. Tubes made of aluminium alloys (duralumn, cromalumino) were used in France and Italy, but this had little effect on the appearance of the chair models. Marcel Breuer was responsible for a true revolutionary change. In the autumn of 1933, the aluminium industry, which suffered from diminishing turnover in the crisis years, organized a design competition for aluminium chairs. There were two juries, one consisting of manufacturers and the other of designers. The avant- gardists Sigfried Giedion and Walter Gropius, among others, had seats in the latter.[8] Both juries awarded the first prize to Breuer. He used aluminium strip that had been cut down the middle along almost its entire length. This gave rise to two narrower strips that were still attached to one another at one end. One strip remained on the ground for the undercarriage, subsequently bending upwards to form the frame of the seat and the backrest, while the other curved directly upwards to form the armrest. By repeating this, two sides were created, which were only connected by means of screws or rivets.* Welding was still too laborious. This technique enabled the production of chairs that were light, flexible and comfortable. Unfortunately, these chairs were not a financial success, and the story goes that the main producer of these chairs, the Embru Company in Rüti, was left with unsold stocks at the end of the thirties. This was in sharp contrast to the aluminium *Landi-Stuhl* by the Swiss Hans Coray, dating from 1938, which was very successful and is still in production today.

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The French designer Jean Prouvé deserves a special mention. In contrast to Marcel Breuer, Le Corbusier or Charlotte Perriand, who championed mechanical inspiration but whose chairs were rigid, Prouvé's chairs were genuine sitting machines. His designs, consisting of curved and welded steel plate, are adjustable in an ingenious manner, so that they can be adapted to the physique and requirements of the person using them.* The armchair designed by Gerrit Rietveld was also made of folded metal plate with rigid joints. Based on his *Birza Chair* of folded plywood, Rietveld designed this chair in aluminium plate in 1943. He wished to realize a

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p. 36

[8] See F. Comalini & S. Gibel, Das Aluminium-Sitzmöbel in der 30er Jahren, Seminararbeit prof. Kramel, ETH-Zürich 1986.

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design that could be produced from a single plate by industrial means within 10 minutes. Another example, now forgotten, is that of the cantilever steel-plate chair by Hugo Häring, dating from 1949.

A new development began to appear towards the end of the thirties. It began with the so-called *Butterfly Chair*, made of thin steel tubing and created in 1938 by the design trio of Hardoy, Kurchan and Bonet. The use of thin tube and steel wire for chairs that were not freely suspended led to new forms at the end of the forties. The Italian sculptor Harry Bertoia, who lived in the USA, made a significant contribution to this development.* Prior to his working on new chair models with Charles Eames in 1943, he had already created sculptures made of steel tube and steel wire. The chairs designed by Bertoia and Eames, with a subframe of thin tube and a seat made of steel wire, are based on the structure of these sculptures. At the same time, designers such as Eames, Saarinen and Jacobsen investigated the possibility of making a seat from fibre glass or laminated wood, thus creating a contrast between the volume of the seat and the slender supporting construction.

From the fifties up to the present day, developments in the use of metal in chairs have not been characterized by single tendency. There have been no broad trends comparable to those of the thin tube and wire chairs from the forties and there has been no design revolution similar to the introduction of the tubular steel chair in the twenties.

Tubular steel remained in use for the most common chairs. By replacing the rounded tube with an angular profile of folded steel plate, Friso Kramer brought innovation in the production of office chairs in the fifties. Steel and aluminium continued to be the most commonly used metals. Charles Eames embarked upon a new course when he introduced the swivel armchair and office chair, in which the hard seat was replaced by a soft covering stretched between the aluminium frame. Other designers later created their own versions of this.[9]

Chairs made of one or more metal plates occur incidentally, such as the steel plate armchair by Ron Arad, the chaise longue covered with aluminium plate by Marc Newson (both dating from 1986), and the chaise longue made from a single aluminium plate by Maarten van Severen (1996). Shiro Kuramata's armchair made of a steel grid (1986) can also be placed in this category. The use of metal is frequently limited to the legs of the chair, without the metal making any further contribution to the actual form of the chair. The seat and backrest are made of other materials. Occasionally the metal frame is completely upholstered, so that the metal has only a constructive function and is hidden from sight.

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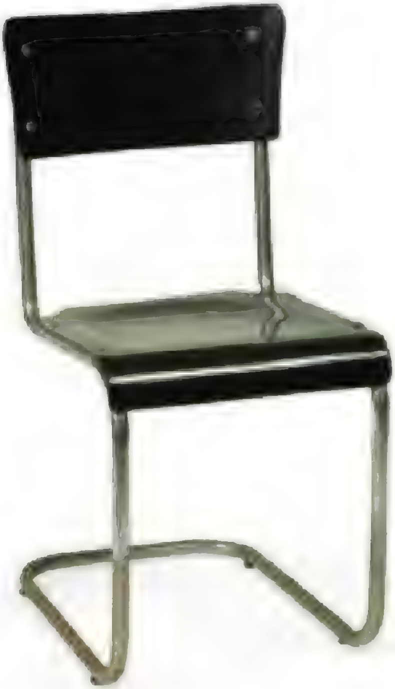
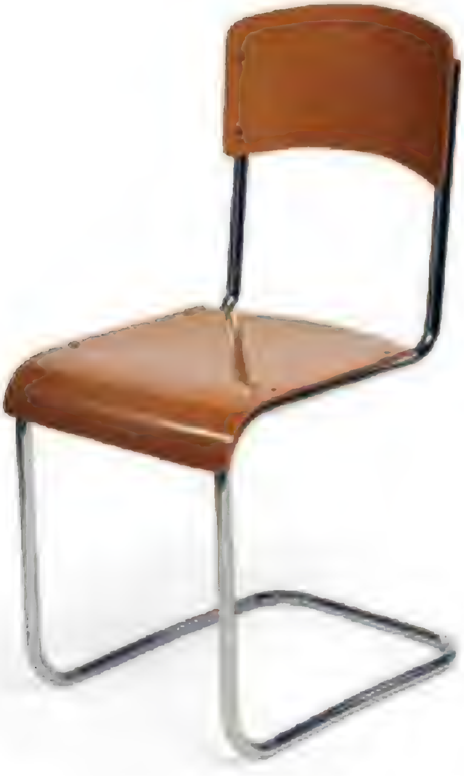
[9] See a.o. C. & P. Fiell, 1000 Chairs, Cologne 2000, p. 507-513.

Some older designs are quoted, such as the *Wassily Chair* by Mendini (*Redesigning Wassily Chair*, 1978), Ron Arad's *Rover* (2000) which is a paraphrasing of Prouvé's chair from 1924, or the variations on Jacobsen's chairs with a plywood seat by Gianni Pareschi (*Novia*, 1996). The new interpretation of Breuer's constructive invention in 1933 by Poul Kjaerholm, this time in steel (1951, model PK25), was a striking manifestation.

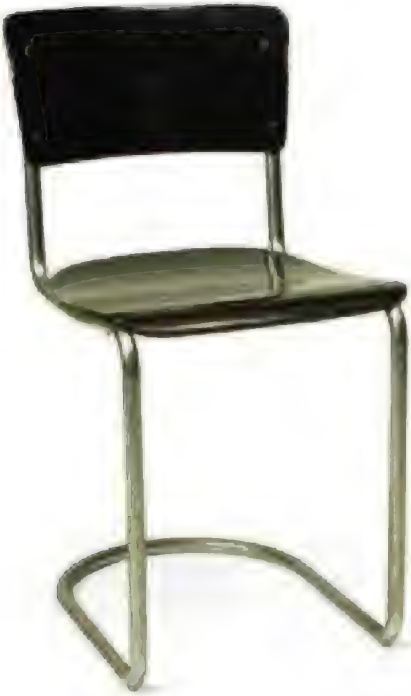
The growing, post-modern shift from chairs as user items to design chairs as museum objects has produced a diversity of experimental designs in metal. The *Etruskian Chair* by Danny Lane (1984) and the 'revamped' shopping trolley by Stiletto (*Consumer's Rest*, 1983) serve as examples for many others. However, these designs have not lead to a new breakthrough in sitting style. .



Anonymous, chair, 1930s
Inv. no. 20032147, 20032063
Chrome-plated tubular steel; black-lacquered plywood
44.5 × 84.5 × 38.5 × 49 cm ø 22 mm
Unknown, copy of Thonet B43



Anonymous, chair, 1930s
Inv. no. 20070005
Chrome-plated tubular steel; black-lacquered plywood
46 × 87.5 × 39 × 51.5 cm; ø 21 mm
Auping, model 5030
Lit.: O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 34, I-A-137
Donation from Gerrit Oorthuys, 2007



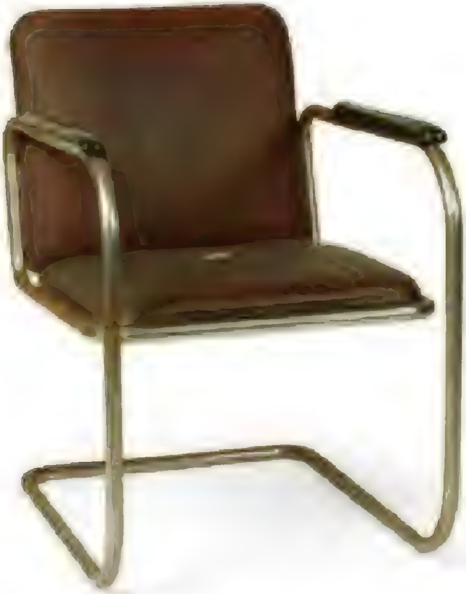
Willem Hendrik Gispen, chair, design 1934, object 1934-1940
Inv. no. 20032064

Chrome-plated tubular steel; black-lacquered plywood
48 × 81 × 40 × 47.5 cm ø 23 mm
Gispen b.v., Rotterdam later Culemborg, model 108, (since 1946 in production under the same model number with rectangular slides)
Lit.: J. van Geest & O. Máčel, *Stühle aus Stahl. Metallmöbel 1925–1940*, Cologne 1980, p. 81; M. Mual, *Gispen buismeubelen en verlichting 1920–1940*, Nijmegen 1990, p. 14; A. Koch, *W.H. Gispen. Serieproducten 1923–1960*, Rotterdam 2005, p. 153; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 42, I-A-233

A cantilever chair made of chrome-plated steel tubing and a black-lacquered plywood seat and backrest. The supporting frame consists of a single continuous open line that ends behind the backrest on either side. The rounded skid-type base deviates from the standard model of the cantilever chair.

There is also a version of this chair with armrests (model 208) and one that is not freely suspended (model 107), whose seat is connected at the rear to the skid base by means of a tube. The chair could be supplied in various finishes: besides the black-lacquered model, it was also available with clear-varnished birch plywood, or upholstered with Manchester fabric, peau de pêche, or hand-woven material.

Staff room in a school, interior design by H. Kammer and J. Kammer-Kret. Source: W. Retera, *Het Moderne Interieur*, Kosmos, Amsterdam 1937, p. 153.



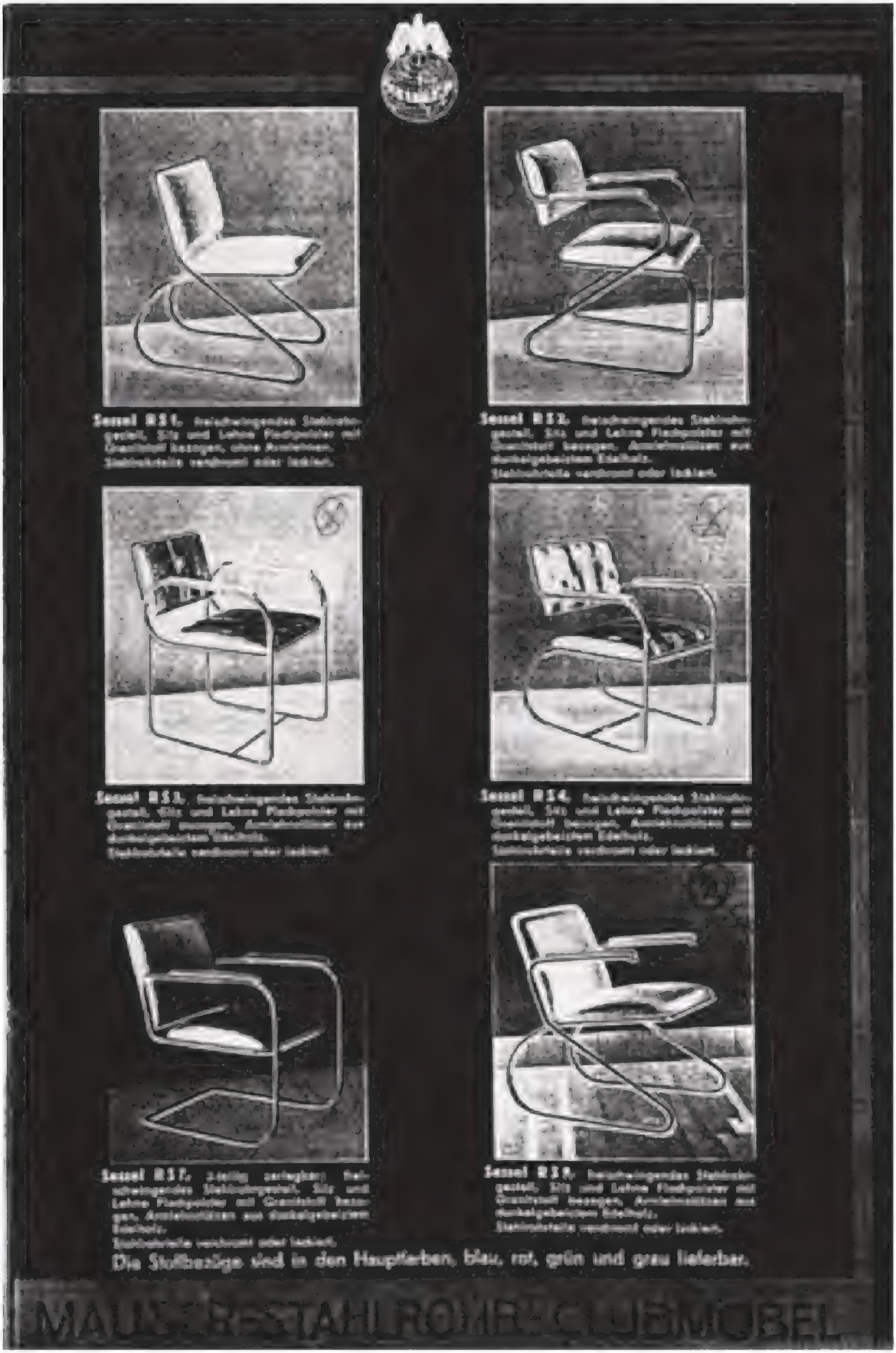
Anonymous, chair with arm rests, prior to 1934
Inv. no. 20032065

Chrome-plated tubular steel; wooden frame upholstered, leather, black-lacquered wood
45 × 82 × 57 × 73 cm; ø 25 mm
Mauser, Waldeck, model RS1
Lit.: A. von Vegesack, *Deutsche Stahlrohrmöbel*, Munich 1986, p. 140; O. Máčel, *Der Freischwinger. Vom Avantgardeentwurf zur Ware*, Delft 1992, pp. 118-119

This chair is a variation of the cantilever chair. For a chair with armrests, it is a striking solution with a single continuous line. In comparison to the classical *Freischwinger*, the cantilever principle has been doubled.

This item is a part of six Mauser models against which Mies van der Rohe protested in 1936 on the basis of an alleged infringement of his 1927 patent on the cantilever chair. This launched a legal process lasting eight years.

Mauser-Stahlrohr-Clubmöbel catalogue, 1934. Source: O.M. archives



Sessel RS 1. freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, ohne Armlehnen. Stahlrohrteile verchromt oder lackiert.

Sessel RS 2. freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, Armlehnstützen aus dunkelgebeiztem Edelholz. Stahlrohrteile verchromt oder lackiert.

Sessel RS 3. freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, Armlehnstützen aus dunkelgebeiztem Edelholz. Stahlrohrteile verchromt oder lackiert.

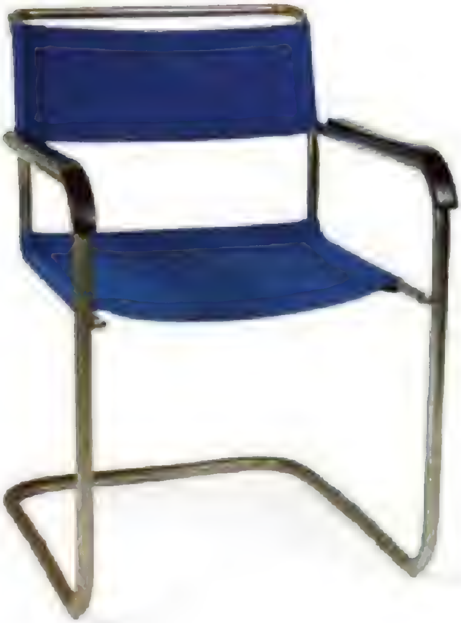
Sessel RS 4. freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, Armlehnstützen aus dunkelgebeiztem Edelholz. Stahlrohrteile verchromt oder lackiert.

Sessel RS 7. 2-teilig zerlegbar, freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, Armlehnstützen aus dunkelgebeiztem Edelholz. Stahlrohrteile verchromt oder lackiert.

Sessel RS 9. freischwingendes Stahlrohrgestell, Sitz und Lehne Flachpolster mit Granitstoff bezogen, Armlehnstützen aus dunkelgebeiztem Edelholz. Stahlrohrteile verchromt oder lackiert.

Die Stoffbezüge sind in den Hauptfarben, blau, rot, grün und grau lieferbar.

MAUSER-STAHLROHR-CLUBMÖBEL



Marcel Breuer, chair with armrests,
design 1929–1930, object before 1935
Inv. no. 20032048

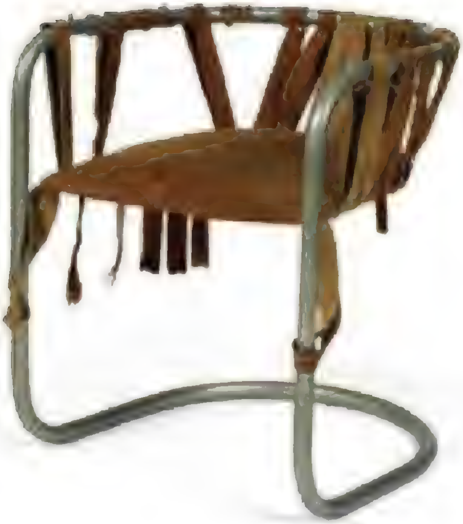
Chromed tubular steel; blue canvas (not original), varnished wood
44.5 × 86.5 × 58.5 × 68 cm; Ø 25 mm
Thonet, Frankenberg, model B34 (1930–1934)
Lit.: C. Wilk, *Marcel Breuer. Furniture and Interiors*, exhib. cat. Museum of Modern Art, New York 1981, p. 73; A. von Vegesack, *Deutsche Stahlrohrmöbel*, Munich 1986, p. 74; M. Droste & M. Ludewig, *Marcel Breuer. Design*, Cologne 2001, p. 91; O. Máčel, 'Erfinder der Stahlrohrmöbel', in: A. von Vegesack & M. Remmele (eds.), *Marcel Breuer. Design und Architektur*, Weil am Rhein 2003, pp. 82-82, 88; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 97, III-A-54

Simple chair with armrests, formed by two lines of tubing. The skid, front legs and armrests form a single closed line, between which the seat/backrest frame has been placed. This forms a second tubular line, which is open underneath. The extremities of the seat tube are attached to the inside of the legs. Button-thread fabric was used for the seat and backrest. The armrests are made of varnished wood.

The original design of this chair was the topic of a legal conflict on the rights to the cantilever chair and the junction of the seat-backrest frame. The design first appeared at the Standard Möbel company in 1928-29, where both Marcel Breuer and his fellow countryman Anton Lorenz were working at the time. After the firm was taken over by Thonet in April 1929, Thonet issued its first catalogue, a folder, showing this chair as *Model B34*. This original version had a specific termination underneath (under the articulation) of the seat/backrest, referred to as the 'Unterabkröpfung', and the backrest then extended upward in a straight line. Lorenz objected to this Thonet product on the basis of his standing right to the cantilever chair and to the 'Unterabkröpfung', which he had already patented. Thonet quickly conceded this latter issue, but launched a process concerning the cantilever chair (1929–1932).

Breuer adjusted the definitive version of the *B34*, as displayed in the collection. He abandoned the 'Unterabkröpfung' and introduced a small crook in the tubing of the backrest, so that the chair offered more sitting comfort while also looking more elegant. He also designed another variant, the *B30*, where the tubing of the seat/backrest does not terminate beside the front legs but right against them. It is difficult to design a cantilever chair with armrests using only a single continuous line of tubing, and usually two lines are applied. However, due to Lorenz's patent, Breuer could not opt for two closed lines.

The definitive version of the *B34* is displayed in the Thonet catalogues dating from 1930 and 1931, and in catalogue no.3209. After Lorenz had won the legal battle in June 1932, the attributions in the catalogues were changed; in catalogue no.3311 (from 1933) this chair was attributed to Stam. After 1935, the chair no longer appears in this form. The model designation B34 remains, but this is actually the previous model B30.

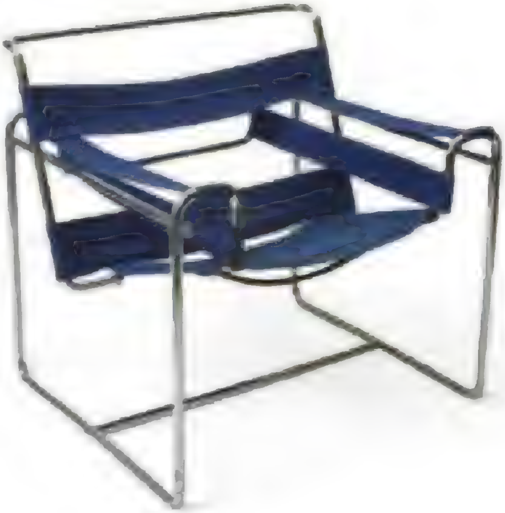


Auke Komter, chair with arm rests, 1930
Inv. no. 20032249, on loan from the NAI
Chrome-plated tubular steel; peau de suède
41 × 61 × 52 × 52 cm; ø 26 mm
Unknown
Lit.: J. van Geest, O. Máčel & G. Oorthuys, *Metalen buisstoelen 1925–1940*, exhib. cat. Stedelijk Museum Het Prinsenhof, Delft, Amsterdam 1975, p. 31; J. van Geest & O. Máčel, *Stühle aus Stahl*, Cologne 1980, p. 150; O. Máčel, *2100 Tubular Chairs*, Rotterdam 2006, p. 194, VI-C-47

A simple cantilever chair or small easy chair consisting of a single continuous line. The symmetry of the tubular frame is striking: the line of the round skid-type base on the ground is identical to the line of the armrests and the back. The leather seat is suspended on the armrests and back by means of leather strips. This was Komter's first design for a tubular steel chair.

Marcel Breuer, easy chair (*Clubsessel*, after 1962 under the marketing name *Wassily Chair*) design 1929-30, object 1930-1931
Inv. no. 20032026

Chrome-plated tubular steel, blue canvas
41 × 76.5 × 76.5 × 68 cm; ø 21 mm
Thonet, Frankenberg, model B3 (1930-1931)
Lit.: M. Breuer, 'Metallmöbel', in: W. Gräff (ed.), *Innenräume*, Stuttgart 1928, p. 133; J. van Geest & O. Máčel, *Stühle aus Stahl. Metallmöbel 1925–1940*, Cologne 1980. p. 64; C. Wilk, *Marcel Breuer. Furniture and Interiors*, exhib. cat. Museum of Modern Art, New York 1981, p. 39; J. van Geest & O. Máčel, *Het museum van de continue lijn/The Museum of the Continuous Line*, Amsterdam 1986, pp. 13-15; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 212-213; M. Droste & M. Ludewig, *Marcel Breuer. Design*, Cologne 2001, p. 62; O. Máčel, 'Erfinder der Stahlrohrmöbel', in: A. von Vegesack & M. Remmele (eds.), *Marcel Breuer. Design und Architektur*, Weil am Rhein 2003, pp. 58-59; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 179, VI-B-137



An easy chair made of chrome-plated tubular steel with a seat and backrest of blue canvas. The tubular frame gives the impression of a stripped club chair, which also conforms to the original German name. The entire unit consists of five sectional components connected by means of bolts. The supporting frame forms the subcarriage, the backrest, two reinforcements on the sides (inside), and the transverse connection along the ground. The seat rod (not counted) is made of chrome-plated solid steel.

This model is probably the last pre-war version of Breuer's first tubular chair dating from 1925.

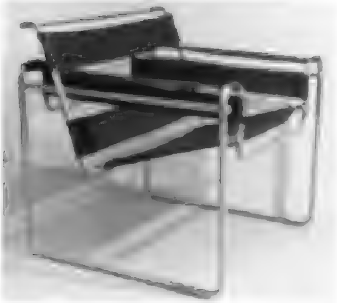
In the course of 1925, the young Marcel Breuer began as the head of the furniture workplace of the *Bauhaus* in Dessau, working on a new type of chair made of tubular steel, which would later become all the rage. Because he had no experience with metalwork he sought assistance from the training department of the *Junckers* aircraft factory, also in Dessau. The first prototype was completed in time for the exhibition of Bauhaus work in the Kunsthalle in Dessau in December 1925, and was photographed by Lucia Moholy-Nagy. It deviated from the example in the collection, the most important difference being that the armchair originally rested on four small legs instead of on a subcarrriage and that the top part of the backrest was 'open'; in other words, that the sides were not

connected by means of a tube. A number of variations followed this, some of which were intended for the school itself and for the houses of the teachers, such as Wassily Kandinsky. There is obscurity concerning the manufacture of these. The ultimately most successful version was produced in 1927-28 by the *Standard Möbel* company in Berlin, a company that had been founded by Marcel Breuer himself and his fellow countryman Kálmán Lengyel a year previously. This version of the easy chair was the first one with a 'closed' back and became the basic principle for all the post-war replicas.

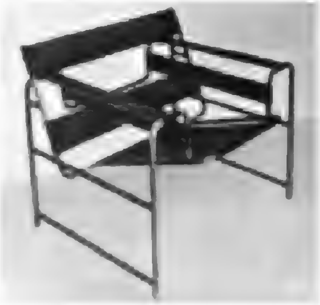
The exceptional feature of all the variants on this theme is the design principle related to the aesthetics of De Stijl movement, particularly to the chairs Rietveld designed in the period 1918-1924. The add-on and sectional structure of beams and planks has now been replaced by tubular steel and by (once-)taut button-thread fabric. The effect is the same: a composition of lines and planes. Breuer himself regarded his tubular steel chair as a metaphor for a machine. He called it '... am wenigsten "wohnlich", am meisten maschinenmässig'. But Breuer's subsequent tubular steel designs were different. The material properties of the steel – the flexibility and the continuous line of the tube, determined the form of the chair.

The model in the collection was manufactured by the Thonet company, which took over Standard Möbel in April 1929, including the rights to all the models. After a short continuation of the previous production, Thonet changed the model. In this new variant – at the front, the supporting frame does not continue on under the knees to the other side – it is uncertain whether or not Breuer himself was responsible for this adaptation. Changes based on production or commercial interests could always be applied. The model only appears in the Thonet catalogues of 1930 and 1932 (*Preisliste Nr.3*), but no longer in catalogue 3209. After 1932, there is no model had been called since the Standard Möbel takeover, and nothing is known of production by a different manufacturer.

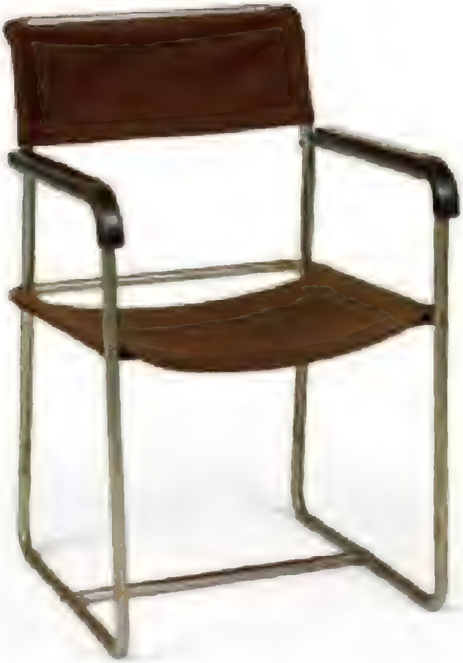
After the war, the *Clubsessel* gradually became a historical item until Marcel Breuer came into contact with Dino Gavina in 1962. In conjunction with Breuer, Gavina again brought the B3 on to the market and gave it the marketing name of *Wassily*, after Kandinsky, whose house had also contained a *B3* armchair. The point of departure for the reissue was the last model made by Standard Möbel, but each new issue had its minor adjustments. The Thonet model in the collection has not yet been reissued.



Marcel Breuer, 1927, Standard Möbel B3 (most common version)



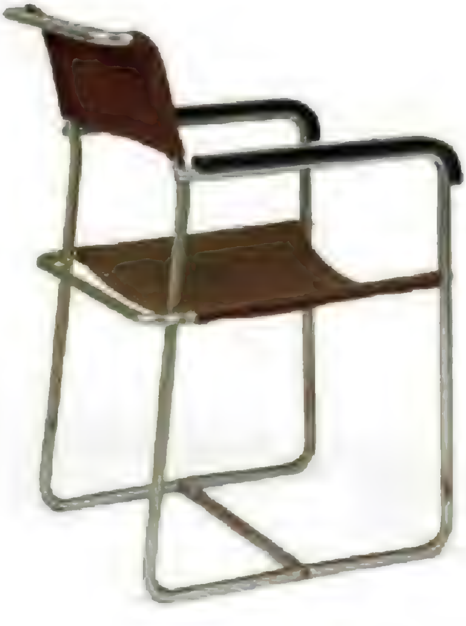
Marcel Breuer, 1925, Junckers workshop, Dessau



Marcel Breuer, chair with armrests, design 1930-31, object 1931-1934
Inv. no. 20032197
Chromed steel tubing; brown canvas, black-lacquered wood
40 × 86.5 × 52.5 × 59 cm; Ø 20 mm
Thonet, Frankenberg, model B11 (1930–1934)
Lit.: A. von Vegesack, *Deutsche Stahlrohrmöbel*, Munich 1986, p. 77; M. Droste & M. Ludewig, *Marcel Breuer. Design*, Cologne 2001; O. Máčel, 'Erfinder der Stahlrohrmöbel', in: A. von Vegesack & M. Remmele (eds.), *Marcel Breuer. Design und Architektur*, Weil am Rhein 2003, p. 91; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 116, III-B-52

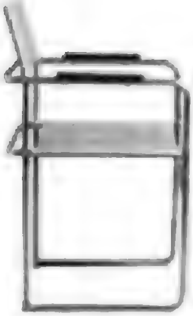
A table chair with armrests made of chromed steel tubing with a seat and backrest of waxed canvas. The supporting frame that forms the front and rear legs, the armrests and backrest has been designed in a half-open tubular line. The other half-open tubular line is formed by the construction of the seat. The skid-type base is reinforced by a transverse connection, and there is a narrow rod under the seat for the necessary tension of the button-thread fabric. The wooden armrests display the typical Thonet form and have been varnished in black.

This chair from the collection is the last development stage version of the B11 model and also illustrates the gradual improvement of tubular steel chair design in general. The oldest version dates from 1926-27, from the assortment of the Standard Möbel company in Berlin. Although there is substantial correspondence with the later version, the first chair did not consist of three components but six. This was due to the fact that the tubular lines were not continuous but were screwed together. In addition, the backrest was open at the top. The next version even consisted of several components, but the 'closed' backrest was the most important improvement in this version; in other words, the rear legs that also formed the backrest were joined together behind the person seated, which aided stability.

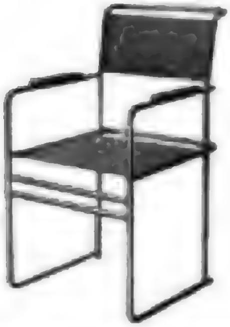


At the takeover of *Standard Möbel*, the Thonet company continued with the second version, but Breuer improved this model further so that the new version could be displayed at the exhibition of the Deutsche Werkbund in Paris in 1930 – at least the model without armrests. A catalogue from the autumn of 1930 shows a transitional model with a U-shaped skid base as well as four legs. It was only in 1931 that the model in our collection appeared in the Thonet catalogues, although the Austrian Thonet catalogue from that year still presents the transitional model. In the subsequent Thonet catalogues this last version of the chair is presented up to 1935, but from 1935 onward a new version of the *B11* is shown, a variant with X-shaped skids.

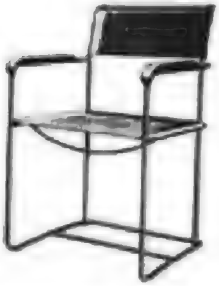
In all its different versions, this *B11* and its offshoot without armrests (model *B5*) were among the most popular tubular metal chairs at the end of the twenties and beginning of the thirties. One could encounter these chairs everywhere, from avant-garde living rooms to the layout of modern cafés. They were only displaced by the increasingly popular cantilever models.



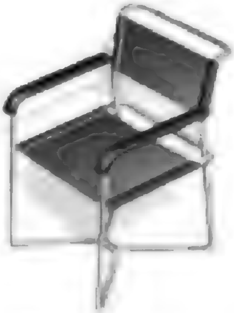
Marcel Breuer, 1926–1927, DESTA B11



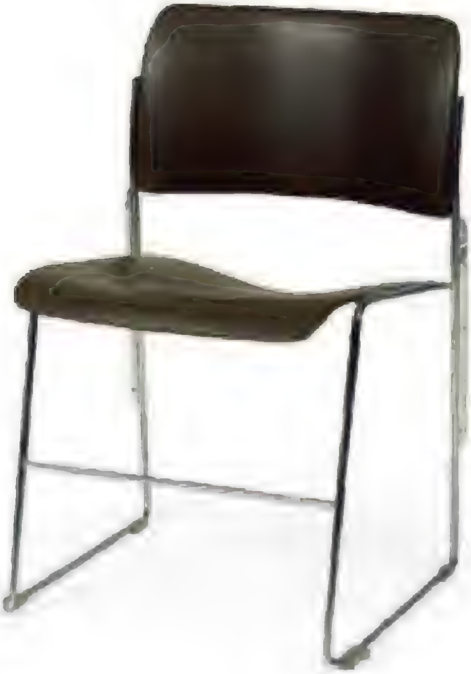
Marcel Breuer, 1927, DESTA B11



Marcel Breuer, 1930, Thonet B11



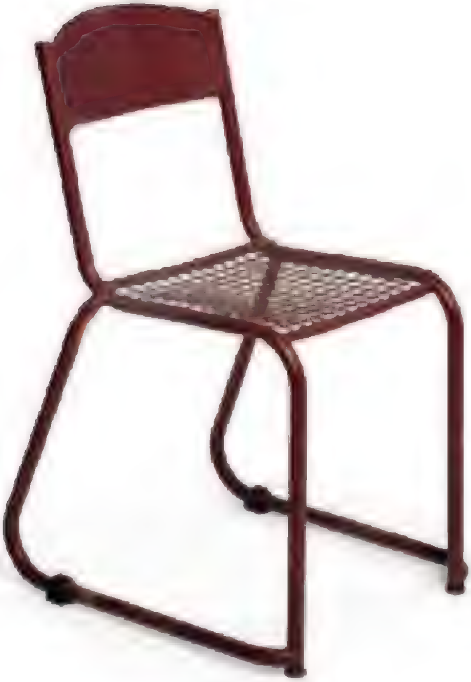
1935, Thonet B11, adapted version without collaboration of Breuer .



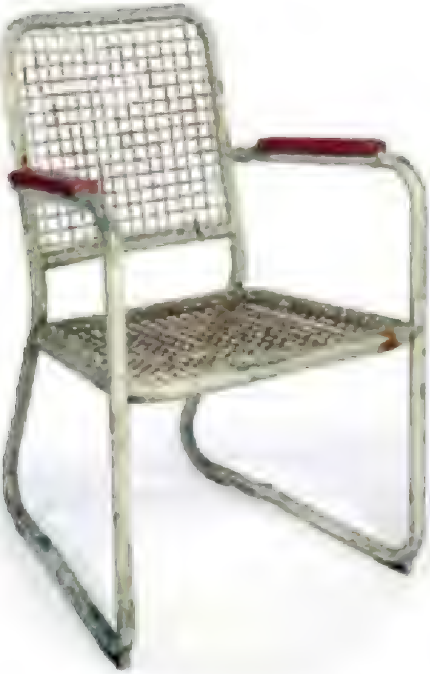
David Rowland, chair, design 1964, object 1965 post quam
Inv. no. 20032050
Chrome-plated tubular steel; lacquered moulded steel sheet
45 × 77 × 48.5 × 54 cm ø 11 mm
General Fireproofing Co., Youngstown (Ohio), 1964 to the present; Howe Europe, Middlefart, 1964 to the present, model GF 40/4
Lit.: C. & P. Fiell, *1000 Chairs*, Cologne 2000, pp. 384-385

Simple stackable chair made of tubular steel and moulded sheet steel. The thin chrome-plated tubing supports the seat and backrest, which are made of lacquered moulded steel sheeting. The original version had a plywood seat and backrest, coated with beech veneer. There is also an upholstered version with armrests and a drop-leaf table. This chair is easily stacked – a stack of forty chairs is only 1.30 metres high.

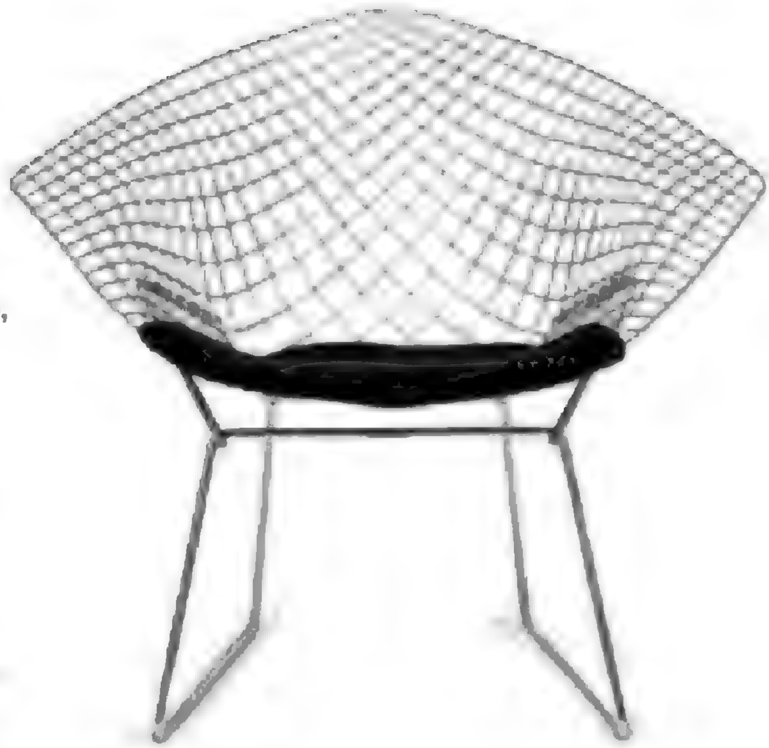
Rowland was awarded a gold medal at the XIII Triennale di Milano in 1964 for this design.



A.T. Ruigrok, chair, design 1930s, object after 1945
Inv. no. 20070008, 20070023 (version with armrests)
Lacquered tubular steel; steel wire-mesh and sheet
44.5 × 78.5 × 44.5 × 51 cm; ø 22 mm
CAR, Katwijk
Lit.: I. van Ginneke, *Kho Liang Ie*, Rotterdam 1986, p. 97
Donation from Christian J. Meijer, 2007



A.T. Ruigrok, chair with armrests, 1934
Inv. no. 20070012
Lacquered tubular steel and wire mesh
42.5 × 86 × 54 × 58.5 cm; ø 25 mm
CAR, Katwijk
Lit.: I. van Ginneke, *Kho Liang Ie*, Rotterdam 1986, p. 97
Donation from Christian J. Meijer, 2007

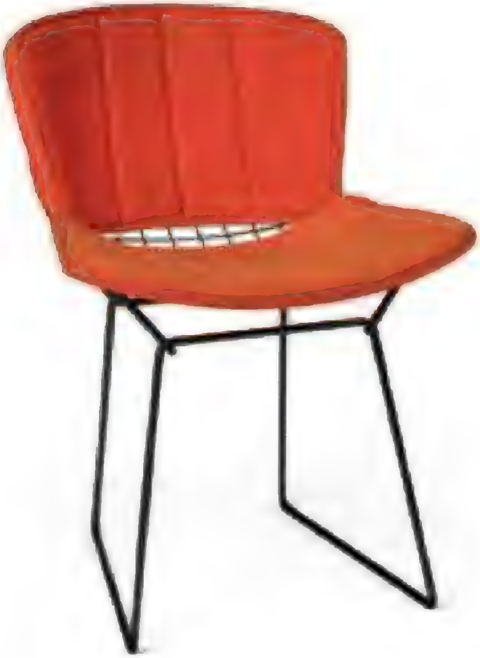


Harry Bertoia, 1952-53, easy chair (*Diamond Chair*), design 1952-53, object after 1953
Inv. no. 20032018
Chrome-plated bent and welded steel rod; cushion stuffed with foam rubber and upholstered with black wool fabric
43 × 75.5 × 85 × 72.5 cm; ø 11 mm legs ø 4 mm seat
Knoll International, New York, model 421 LU (Diamond Chair), (1953 to the present)
Lit.: K. Mang, *Geschichte des Modernen Möbels*, Stuttgart 1989, p. 143; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 86-87; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 315

An easy chair made completely of metal, with a cushion. The seat is made of chrome-plated and welded steel mesh, and the subframe of chrome-plated iron rod. The sections are screwed together. The seat cushion is made of foam rubber and is covered with black wool textile.
Bertoia, who was born in Italy, was originally a sculptor. From 1939 to 1943 he taught at Cranbrook Academy in Michigan, where he became acquainted with Saarinen and his son, and with Eames. In 1943, Charles Eames asked him to work on the development of new furniture at his office in California, where experiments were carried out with seats made of different materials and studies were performed on adjusting seats to body shape. In 1946, Bertoia left the company as a result of dissatisfaction with the recognition of his share in the design process, and Hans Knoll offered him a studio where he could work on his own on a series of steelwire chairs, largely simultaneously with Charles Eames. This development even led to a legal conflict between Herman Miller, Eames's manufacturer, and Hans Knoll, Bertoia's producer, concerning the rights to the steelwire chair. This conflict was eventually settled in Eames and Miller's favour.

The simple frame and the mesh construction of the seat and the backrest make the easy chair completely transparent. The cushion is necessary to ensure sitting comfort, but it does disturb the aesthetic form. Although chairs are mainly intended to solve functional problems, Bertoia found that chairs are also spatial studies, just like sculptures. The name 'Diamond Chair' is a metaphor that places the seat as a multi-faceted diamond set in the frame. Originally Knoll also offered the chair in black-lacquered and white-plasticized versions. However, the chair was always expensive due to the fact that spot welding the mesh seat had to be done manually.

At around the same time, or perhaps even earlier, Bertoia designed a table chair on a subframe of thin steel tube with a seat made of steelwire. In comparison to the easy chair, the wire mesh of the chair is simpler and less spectacular. Moreover, the cushion, which is a fixed component of the chair, conceals the wire construction of the seat.



Harry Bertoia, chair, design 1950–1952, object 1952 post quam
Inv. no. 20032055

Black-enamelled bent and welded steel rod; orange fabric cushion
46 × 72.5 × 54 × 62 cm; ø 11 mm legs; ø 4 mm back
Knoll International, New York, model 420 C, (1953 till now)

Lit.: A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, p. 86 (ill.); C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 314

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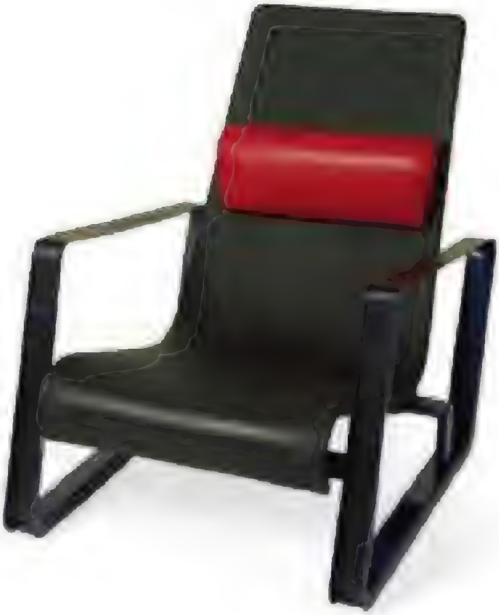
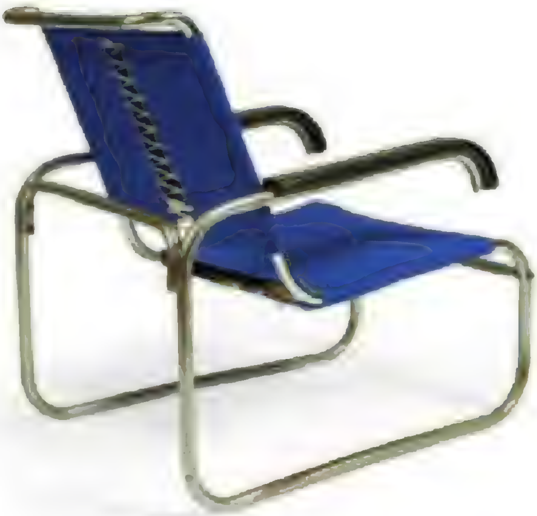


Jean Prouvé, easy chair, enamelled steel profile; leather and foam-rubber, design 1927, object 1987
Inv. no. 20032082

31 × 83 × 67.5 × 92 cm
TECTA, Lauenförde, (1987-2000); original Société des Ateliers Jean Prouvé, Nancy, (1931-32).
Lit.: J. van Geest, 'Meubels', in: W.A.L. Beeren et al. (eds.), *Jean Prouvé constructeur*, exhib. cat. Museum Boymans-van Beuningen, Rotterdam 1981, p. 37; J. van Geest, *Jean Prouvé Möbel = Furniture = Meubles*, Cologne 1991, pp. 40-43; C. & P. Fiell, *1000 Chairs*, Cologne 2000; J. van Geest, 'Das "Anti-Design" van Jean Prouvé', in: A. von Vegesack (ed.), *Jean Prouvé. Die Poetik des technischen Objekts*, exhib. cat. Vitra Design Museum, Weil am Rhein 2006, pp. 311, 316

An easy chair made of strip steel profile, leather and foam rubber. The supporting frame consists of U-shaped steel profiles that form the skid-type base. Leather belts, forming the armrests, have been spanned in the profiles. The base is held together by two steel transverse connections on which the tubular skeleton of the seat and backrest is mounted. This is covered in black leather and sandows are spanned at the seat with textile and foam rubber on top. A foam rubber cushion covered in red leather serves as a headrest, and it is fixed to the backrest by means of an elastic belt. This easy chair is part of the furniture with which Prouvé won the first prize for furnishing the Cité Universitaire in Nancy in 1928.

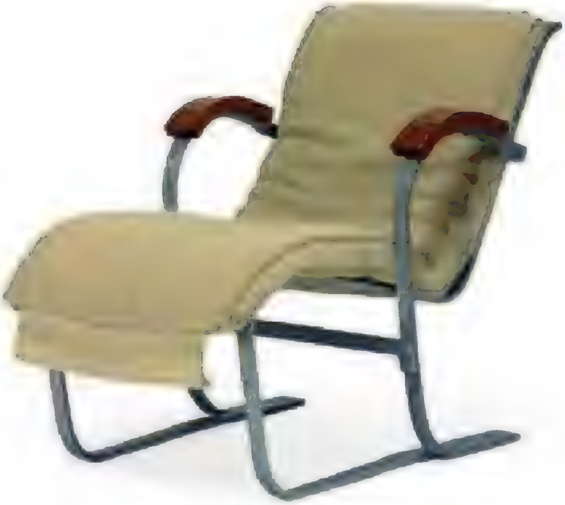
Marcel Breuer, easy chair, design 1929, object 1934-1937
Inv. no. 20032025
Chrome-plated tubular steel; blue canvas (not original), black-lacquered wood
36 × 81 × 58 × 83 cm; ø 25 mm
Thonet, Frankenberg, model B35, (1930-1937, 1971-present)
Lit.: *Thonet Stahlrohrmöbel,* Thonet catalogue 1935, p. 11; C. Wilk, *Marcel Breuer. Furniture and Interior*, exhib. cat. Museum of Modern Art, New York 1981, pp. 82-83; J. van Geest & O. Máčel, *The Museum of the Continuous Line*, Amsterdam 1986, pp. 31-32; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 74-75; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 169; M. Droste & M. Ludewig, *Marcel Breuer. Design*, Cologne 2001, p. 95; O. Máčel, 'Erfinder der Stahlrohrmöbel', in: A. von Vegesack & M. Remmele (eds.), *Marcel Breuer. Design und Architektur*, Weil am Rhein 2003, pp. 130-132; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 139, V-B-3



A low easy chair made of steel tubing with a single open continuous line. Although the armchair rests on a skid-type base, it can be referred to as 'cantilever' because the seat/ back positioned between the armrests has no rear legs. A transverse tube has been placed at the front and back for stability. The seat is made of waxed canvas, while the armrests of black-lacquered wood have the characteristically curved Thonet form.

Although Breuer was not the inventor of the cantilever or freely suspended chair, he managed to incorporate this principle in his designs in an ingenious fashion. The *B35* armchair, manufactured by the Thonet Company from 1930 onward, is an excellent example of this. The design is based on a single continuous tubular line, which was then quite a challenge, and combines the skid-type base with the cantilever principle. The result is an elegant chair whose design line cannot be comprehended at a glance. This is partly due to the play of lines, which begins at one armrest and ends at the other. As such, this armchair is the precursor of the more complicated single-line easy chairs by designers such as Erich Dieckmann or Ernst A. Plischke. But in Breuer's case, the linearity is functional – the armchair benefits in terms of stability from the combination of free suspension and the skid.

In Thonet's version, there are small adjustments that are difficult to date. These primarily concern the transverse connections at the rear, of which there are several variants. The oldest version had a low cross connection, as shown on photographs of the Deutsche Werkbund's exhibition in Paris in 1930. Later connections are higher up. The model in the collection has a higher transverse connection, curved at either side, which probably dates from the mid-thirties onward. Between 1930 and 1937, Thonet manufactured the standard version of the chair with waxed canvas, leather or wickerwork seat/backrest. From 1971 onward, the company restarted production with a leather or woven version. In the Netherlands, the *VEHA* (The Hague) and *Auping* (Deventer) companies manufactured a version of the armchair with adjusted proportions prior to the war.

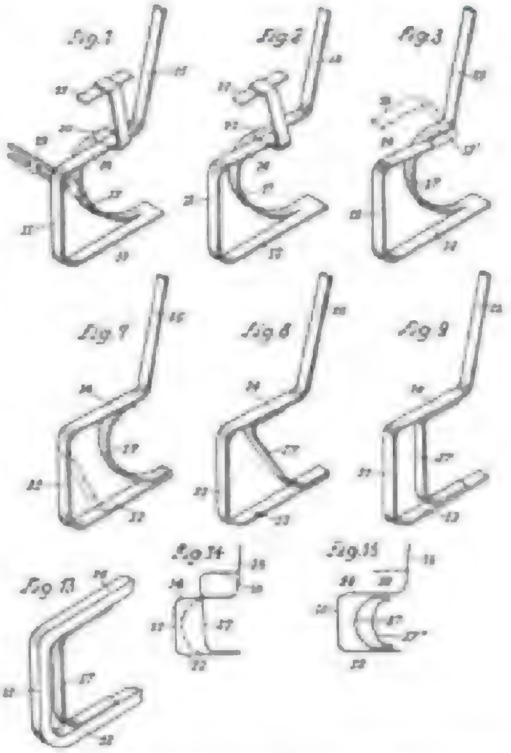


Marcel Breuer, easy chair with arm rests, design 1933, object 1934-1937
Inv. no. 20032019
Aluminium band; wood, cushion stuffed with rubbered hair
37 × 69 × 50.5 × 87.5
EMBRU, Rüti, model no. 311
Lit.: C. Wilk, *Marcel Breuer. Furniture and Interiors*, exhib. cat. Museum of Modern Art, New York 1981, p. 123; F. Comalini & S. Gibel, *Das Aluminium-Sitzmöbel in den 30er Jahren*, ETH Zurich 1986, pp. 43-45; M. Droste & M. Ludewig, *Marcel Breuer. Design*, Cologne 2001, p. 123; F. Mehlau-Wiebking, A. Rüegg & R. Tropeano, *Schweizer Typenmöbel*, Zurich 1989, pp. 88, 141; P. Lepel & O. Spies, *Über Möbel*, Rüti 2001, p. 68

A low, extremely light armchair made of aluminium strips with a flat cushion. The seat and backrest are supported by two aluminium strips that form the front leg, back leg and half of the frame on either side. This is possible due to the fact that each strip has been split into two sections along its length. One of these sections extends directly upward to form the back leg and armrest, and the other part extends forwards to form the front leg and half of the seat-backrest frame. Two sides are thus generated, and these are subsequently joined crosswise by two aluminium strips. The flat cushion is filled with 'rubbered hair' and upholstered with light beige epinglé fabric, while the armrests are made of varnished wood.

In the early thirties, Marcel Breuer was seeking an alternative for the flexibility of the cantilever chair. He first experimented with steel tubing. In November 1932, he requested a patent in Berlin for a new construction of flexible tubular furniture. In his design of a cantilever chair, Breuer added two extra tubular curves, in different variations, to either side of the chair. He was not the only one to do so: a similar chair by the Belgian firm Annoye is known from an advertisement dating from 1931, and the Czech architect Antonín Heythum experimented with an extra support in 1932.

But Marcel Breuer developed his structural principle in co-operation with the Swiss company



Breuer's German patent drawing, Berlin, 16 November 1933

ARCHITECTES DECORATEURS

NOUS CONSTRUISONS EN SÉRIE
MEUBLES MODERNES EN TUBE
D'ACIER NICKELÉ OU CHROMÉ
AMEUBLEMENT SCOLAIRE

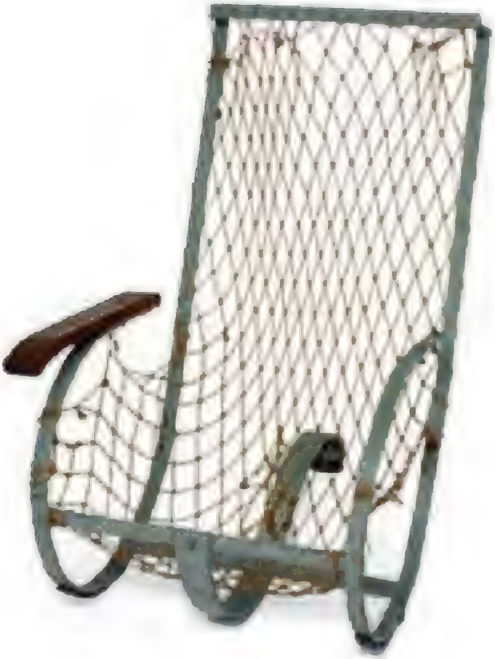
LES ANCIENNES
USINES
ANNOYE
A CHASTRE BELGIQUE

TEL :
WIL St VINCENT N°32

Advertisement by the Belgian firm Annoye, Chastre, in *La Technique des Travaux*, March 1931

EMBRU in Rüti, so that the above-described method could be applied in aluminium, steel strips, and plywood. In this way, it became possible to create a light construction whose components could be connected by means of screws and rivets. Although these chairs were not freely suspended, they were reasonably flexible. Breuer patented this invention in November 1933 and at the end of that year he participated with several variants of this chair in a design competition organized by the Alliance Aluminium Cie in Paris, including the model that the Faculty of Architecture currently possesses. He received two first prizes for his submissions: one from the manufacturers' jury and the other from the designers' jury. Paul Schuitema and J.B. van Loghem from the Netherlands also participated in the competition, but their submissions were a literal translation of their tubular steel furniture in aluminium.

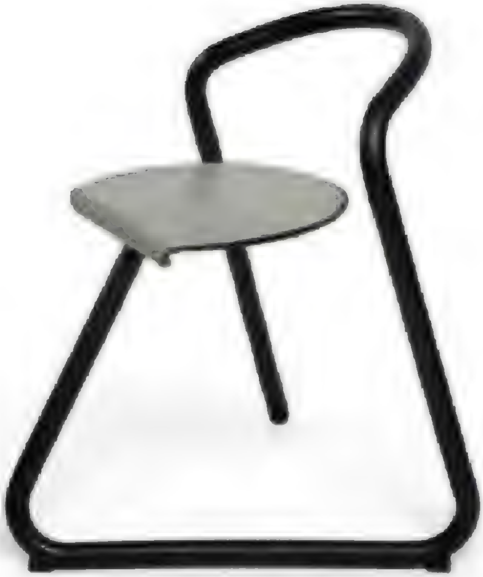
The manufacture of Breuer's chairs began with the EMBRU company's production for the Wohnbedarf interior shop in Zurich, which had been founded in 1932 by Sigfried Giedion, among others. After 1934, EMBRU itself organized the distribution of the chairs and experimented further with other aluminium strips. Outside Switzerland, these models were produced under Swiss licence by the Brondel company in Lyon, for the Stylclair interior shop, also situated in Lyon, and in Italy several models were produced by the A.L. Colombo company (under the Columbus brand) in Milan. In Germany, the Gebrüder L. & C. Arnold company in Schorndorf manufactured a few models for a short period (1934-35). It is unknown whether or not the model in the collection was manufactured by the licensees. The production in Switzerland was the most successful, but the new construction principle did not last, although Breuer did apply this principle to further developments of his folded plywood chairs, manufactured in England by the Isocon company.

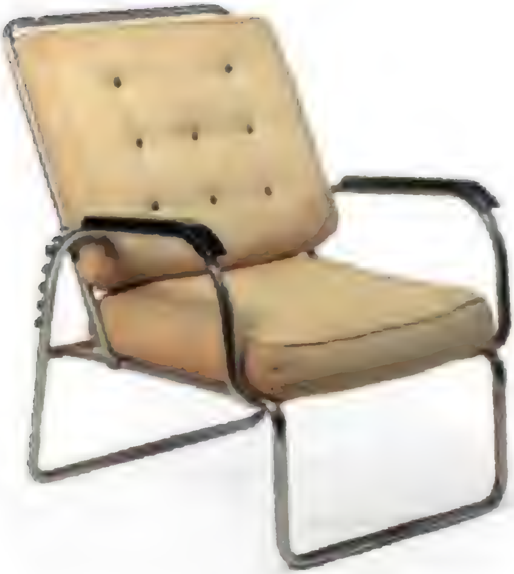


Anonymous, rocking chair, 1930s (?)
Inv. no. 20032022
Grey-lacquered iron strip; netting, wood
25 × 83.5 × 56.5 × 82.5 cm
Unknown

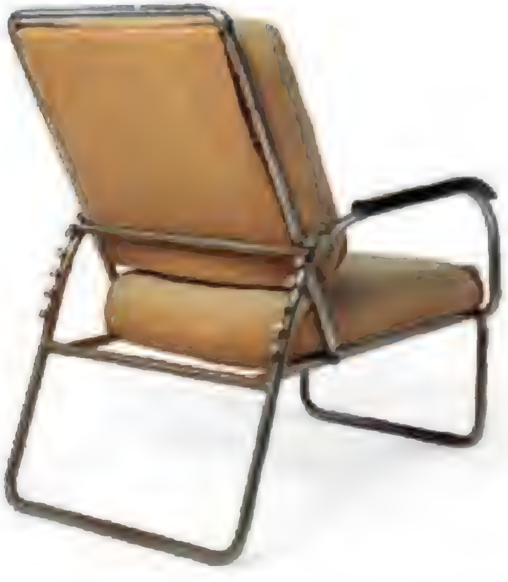
Erik Magnussen, chair (Magnus), 1989
Inv. no. 20070002
Black-lacquered tubular steel; sheet steel with rubber covering
44.5 × 68 × 58 × 56 cm; ø 30 mm
Paustian, Copenhagen, model Magnus
Lit.: H.S. Møller, *Shortcuts. Erik Magnussen Design*, Humlebæk 2007, pp. 72-77
Donation from Mr Durk Rienstra, Delft, in 2007

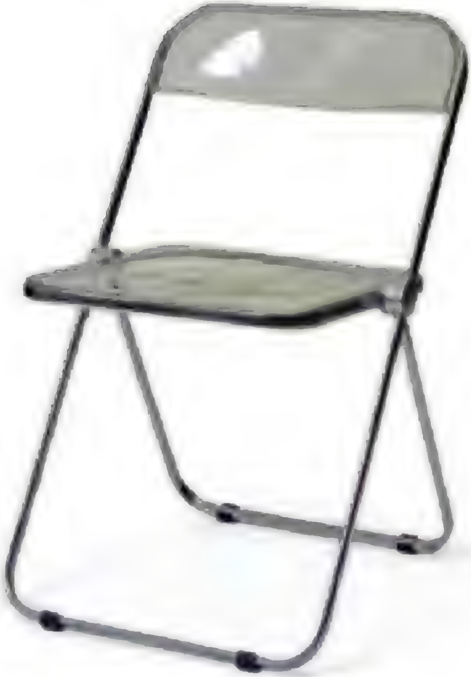
An example of a tubular chair formed by a single continuous line, whose curves form three legs. The chair is flexible, because the seat is only supported by the extremities of the tubing and is not fixed to the backrest. The steel sheet that forms the seat is slightly curved at the front for sitting comfort. The rubber layer on the seat is grey, with blue-grey, light-grey and black specks. The tubing rests upon three rubber floor gliders.





Anonymous, easy chair, 1930s
Inv. no. 20032134
Chrome-plated tubular steel; cushions on sandows
45 × 105.5 × 70 × 96 cm; ø 26 mm
Unknown
Adjustable back





Giancarlo Piretti, folding chair (*Plia*), design 1968, object 1969-1985
Inv. no. 20032006

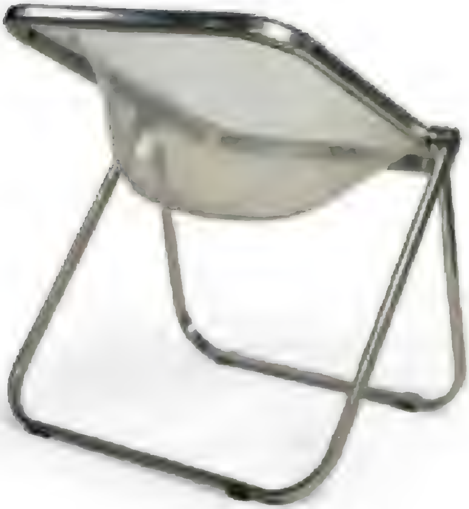
Chromed oval steel tube; Cellidor
54 × 75.5 × 46.5 × 50 cm
Castelli, Ozzano dell' Emilia, model Plia, (1969 till now)

Lit.: K. Mang, *Geschichte des modernen Möbels*, Stuttgart 1989, p. 24; P. Kjellberg, *Le Mobilier du XXe Siècle*, Paris 1994, p. 491; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 128-129; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 443; D.G.R. Carugati, *Giancarlo Piretti*, Milan 2003, pp. 24-34.

Folding chair made of chrome-plated oval steel tubing, with seat and back of premoulded Plexiglas. With this chair, Giancarlo Piretti, who worked for a number of years as a teacher of Interior Architecture at the Academy of Art in Bologna, revived an old design. The form of this folding chair was already well known prior to WWII, in both wood and metal. However, Piretti's folding mechanism was new. The hinge of legs, back and seat is formed by a tripartite joint that makes it possible to fold the entire chair into a rectangle no thicker than 5 cm. Once folded, the chair is easily stacked; it can also be hung on the wall by means of a specially designed hanger.

The elegant appearance of this folding chair did not escape the attention of the public or the professionals. Between 1969 and 1996, more than four million examples were sold. The chair was awarded a medal at the Biennale in Ljubljana in 1971, and received the German 'Gute Form' design prize from the Design Council in Darmstadt in 1973.

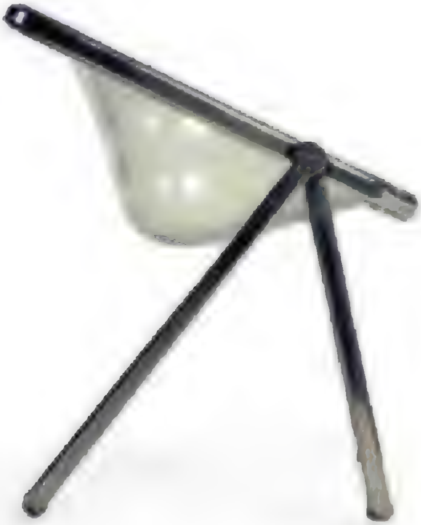
As a follow-on to the *Plia*, Piretti designed the *Plona* folding armchair, with a synthetic hollow as the seat and backrest. It formed an ensemble in conjunction with the *Platone* folding table and the *Pluff* folding stool.

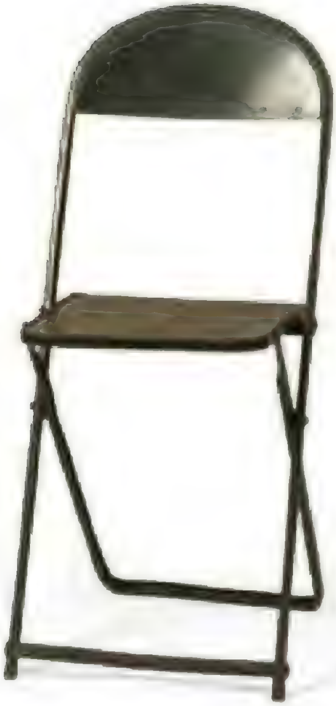


Giancarlo Piretti, folding chair (*Plona*), 1970
Inv. no. 20070010

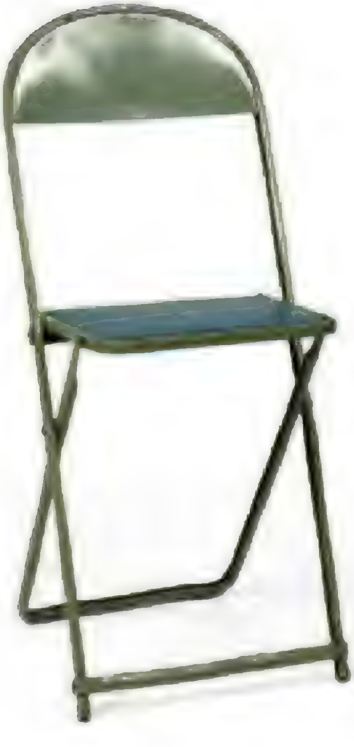
Chrome-plated oval steel tube; Cellidor
47 × 74 × 67.5 × 60 cm
Castelli, Ozzano dell' Emilia, model Plona
(1970 to the present)

Lit.: *Italy, The New Domestic Landscape*, exhib. cat. Museum of Modern Art, New York 1972, p. 34; D.G.R. Carugati, *Giancarlo Piretti*, Milan 2003, pp. 30-31

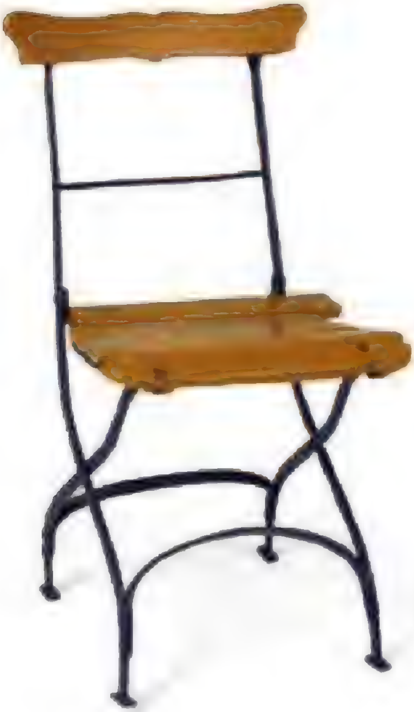




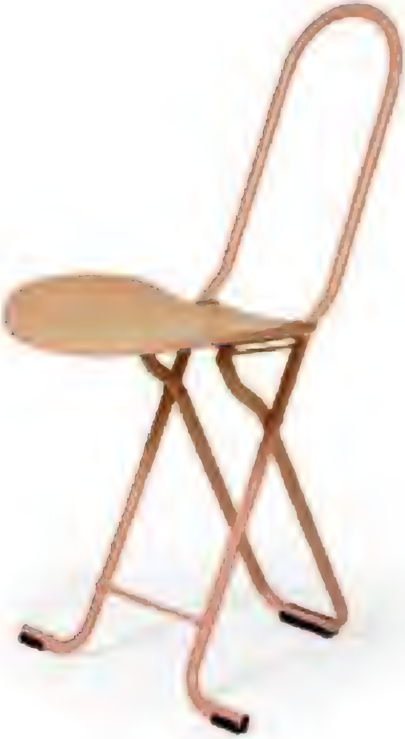
Anonymous, folding chair, 1930s (?)
Inv. no. 20032074
Moulded, green-lacquered steel sheet; wood and steel sheet
47.5 × 87 × 38.5 × 45 cm
De Cirkel ?



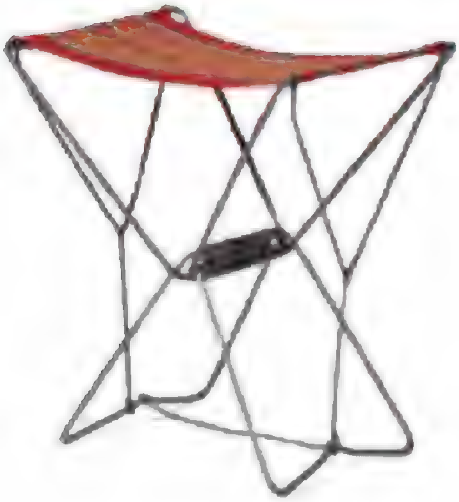
Anonymous, folding chair, design 1933, object 1933 post quam
Inv. no. 20032075
Moulded, grey-lacquered steel sheet; plywood and fabric
49.5 × 88 × 38 × 43.5 cm
Oda, St Oedenrode
Dutch patent 35026, Belgian patent 388426



Anonymous, garden folding chair, 1930s
Inv. no. 20032153
Blue-lacquered steel strip; wood
49 × 85.5 × 44.5 × 53 cm
Unknown, possibly Gebrüder Arnold, Schorndorf

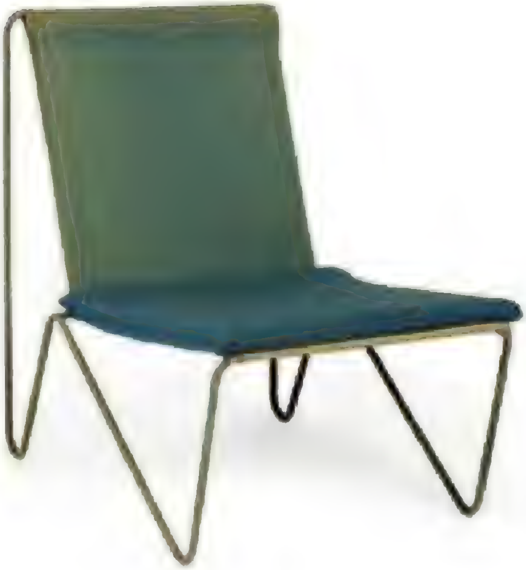


Gastone Rinaldi, folding chair, 1979
Inv. no. 20032041
Rose-lacquered oval tubular steel; plywood
45 × 80.5 × 35 × 51 cm
Thema, Limena
Lit.: L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 326



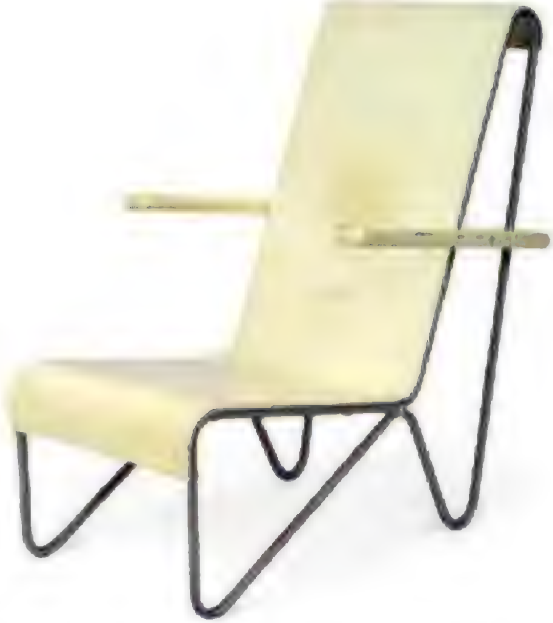
Anonymous, folding stool, after 1950
Inv. no. 20032043

Galvanized iron rod; canvas
40 × 40 × 35 × 26 cm
Tomado, Oosterhout



Verner Panton, easy chair, design 1953, object 1955 post quam
Inv. no. 20032178
Chrome-plated tubular steel; canvas, cushions
37 × 73 × 51.5 × 72 cm ø 13 mm
Fritz Hansen, Allerød, model 3350, (1955- ?)
Lit.: A. von Vegesack & M. Remmele (eds.), *Verner Panton. Das Gesamtwerk*, Weil am Rhein 2000, pp. 26-27, 240
Donation from ir. M. v.d. Meer

A simple, austere-looking easy chair without armrests, designed in a single continuous line, with canvas spanning and cushion. The chrome-plated thin steel tubing seemed to have been borrowed from Rietveld's *Beugel Chair*; but Panton's easy chair is sectional, which was necessary in order to be able to install the canvas spanning for the seat-backrest. In this model, the cushion is made of turquoise, fine-chequered woollen fabric. Several variations were available: the cushions and spanning were available in various colours and also in various materials such as leather, canvas and vinyl. In the version with the armrests, which was also called the *Bachelor Chair*, the steel tubing also formed the armrest, extended between the front and the rear legs.



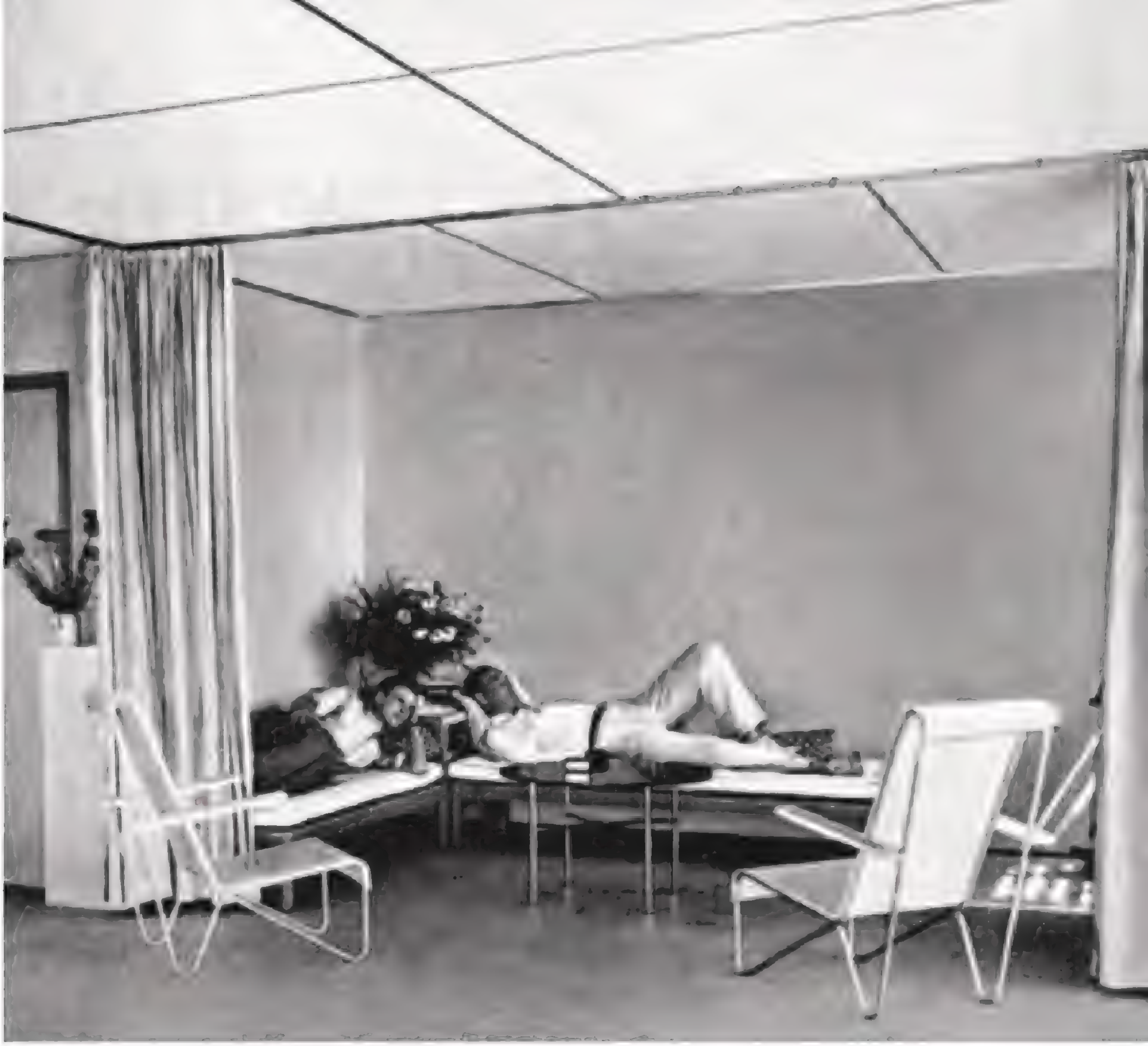
Gerrit Thomas Rietveld, easy chair (*Beugelstoel*), design 1927, object 1931-1937
Inv. no. 20032051
35.5 × 91.5 × 61.5 × 86 cm ø 16 mm
G. van de Groenekan; Metz & Co. model B
Lit.: D. Baroni, *I mobili di Gerrit Thomas Rietveld*, Milan 1977, pp. 116-117; J. van Geest & O. Máčel, *Stühle aus Stahl. Metallmöbel 1925–1940*, Cologne 1980, p. 107; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib. cat. Centraal Museum, Utrecht 1992, pp. 117-118; P. Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 74-75; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 195; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 20006, p. 143, V-C-13
Donation from G.T. Rietveld, 1964

An easy chair with armrests made of aluminium-coated steel tubing with a seat/back of white-painted premoulded plywood. The caps of the armrests are made of solid wood. The metal frame and seat/back are connected by means of nuts and bolts.

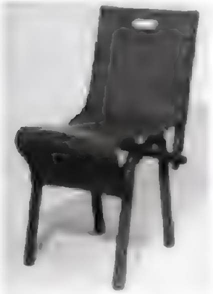
In 1927, Rietveld experimented with designing chairs from a single piece of plywood and fibreboard. This was the same year in which tubular steel furniture attracted public attention at the Werkbund exhibition in Stuttgart. Rietveld combined both aspects in his first design for tubular steel chairs: his so-called 'beugelstoelen'. As such, Rietveld was one of the first designers in the Netherlands, after Mart Stam and along with W.H. Gispen and Jan Schröfer, to be engaged in this field of work. Moreover, his designs are original and cannot be compared to those produced by others. Disregarding the originality of the piece, this was also the first metal chair with a seat and back made from a single unit.

The supporting construction of the armchair in the collection is made of thin steel tubing that forms a single continuous line on either side, a feature that fulfilled the design challenge applying to the tubular steel chair. Originally, Rietveld worked with solid iron rods, but this brought problems with the joints. Tubes can be slotted into one another, whereas rods cannot. So Rietveld allowed the ends of the rods to overlap a little under the backrest and screwed them together there. This was not very practical, however, and Rietveld began to use tubular steel as early as 1927-28. The seat/back unit was initially made of fibreboard, a material with which Rietveld had previously experimented. But because it turned out to be difficult to mould fibreboard, Rietveld switched to plywood in 1930. He ordered a number of moulded plywood seats in Scandinavia at the beginning of the thirties.

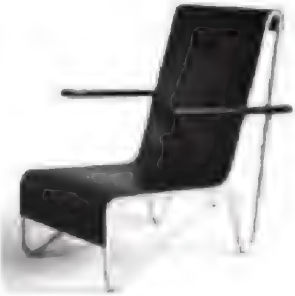
Rietveld designed various versions of the *Beugelstoel*, a high version with a straight back, and low one with a straight back, with and without armrests. His design attracted attention at the *A.S.B.* exhibition the Stedelijk Museum in Amsterdam in 1928, and at the *Der Stuhl* exhibition that began in Stuttgart in the autumn of 1928. Originally Rietveld made the chairs himself, in conjunction with G. van de Groenekan. Later, after 1931, the production was taken over by Metz & Co.



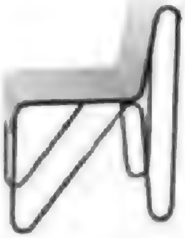
Living room of a summer cottage by B. Merkelback and C.J.F. Karsten Jr., Schoorl. Source: W. Retera, *Het Moderne Interieur*, Kosmos, Amsterdam 1937, p. 71.



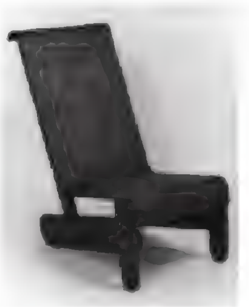
With this wooden chair, dating from 1927, Rietveld again applied the principle of two separate side frames that are connected by a one-piece seat and backrest. Source: P. Vöge, *The Complete Rietveld Furniture*, 010 Publishers, Rotterdam 1992, p. 73.



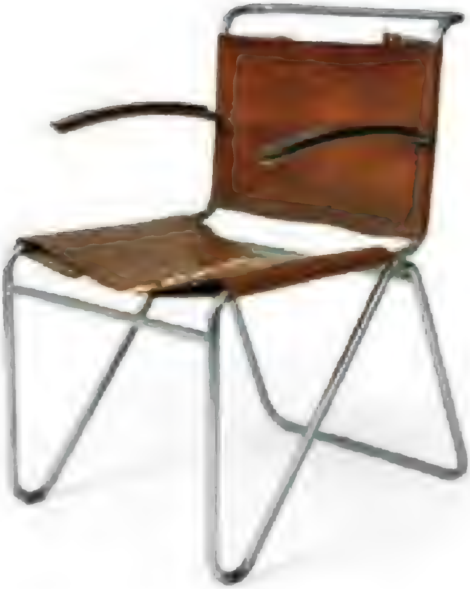
Gerrit T. Rietveld, first version, 1927



Gerrit T. Rietveld, 1928, Metz & Co. 1931–37



Later, around 1930, Rietveld also combined the same seat with wooden frames. Source: P. Vöge, *The Complete Rietveld Furniture*, 010 Publishers, Rotterdam 1992, p. 79.



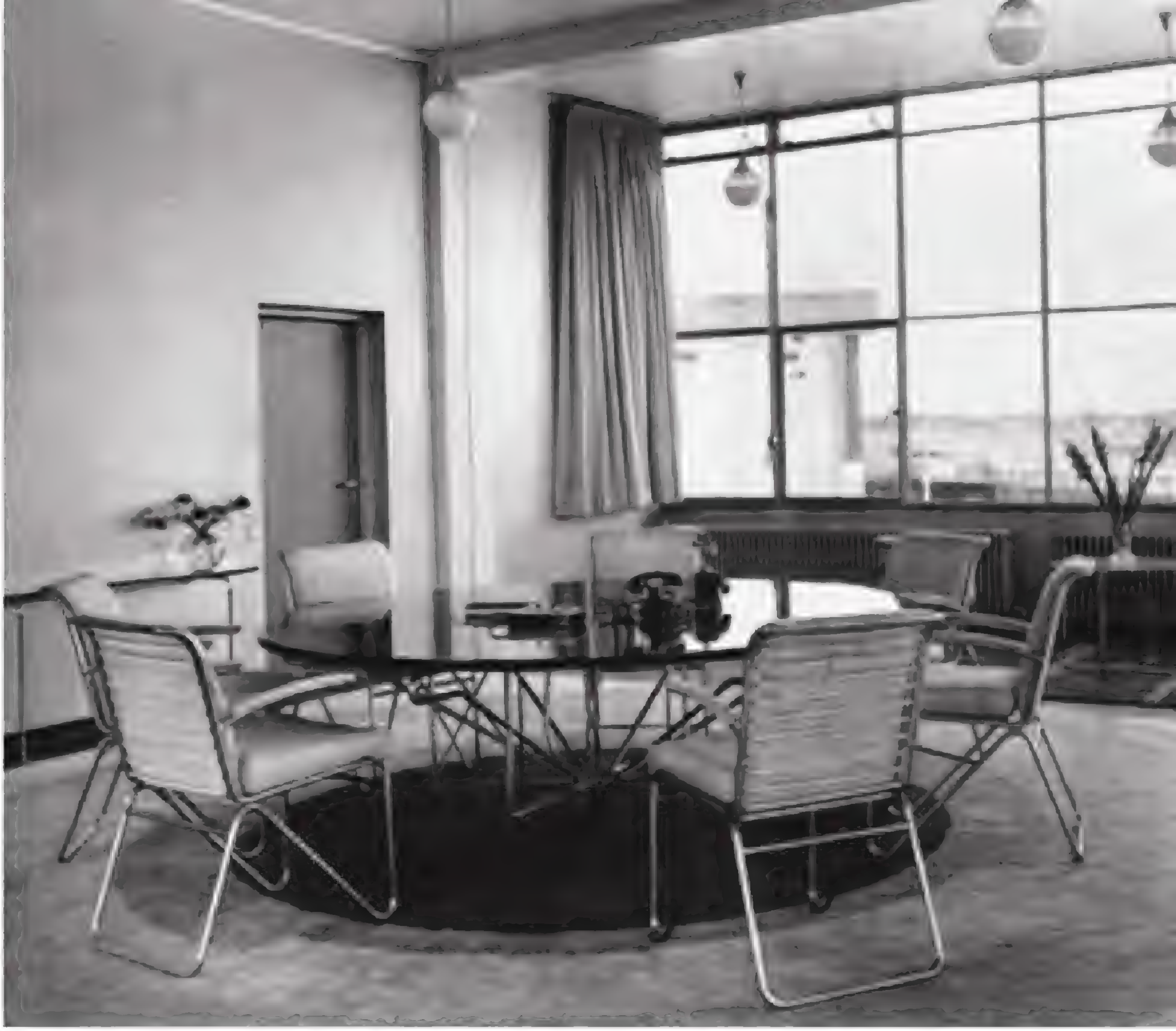
Willem Hendrik Gispen, chair with arm rests, design 1927, object 1931-1940
Inv. no. 20032149
Chrome-plated tubular steel; leather, bakelite covered with leather
46 × 87 × 52.5 × 67 cm; ø 19 mm
Gispen, Rotterdam, model no.4, from 1931 onward, no. 203
Lit.: J. van Geest & O. Máčel, *Stühle aus Stahl. Metallmöbel 1925–1940*, Cologne 1980, p. 81; A. Koch, *Industrieel ontwerper W.H. Gispen (1890–1981). Een modern eclecticus*, Rotterdam 1988, pp. 64, 65, 70-73; M. Mual, *Gispen, buismeubelen en verlichting 1920–1940*, Nijmegen 1990, p. 11; A. Koch, *W.H. Gispen serieproducten 1923–1960*, Rotterdam 2005, p. 233; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 90, II-C-3

A table chair with armrests made of chrome-plated tubular steel, with a leather seat and back. The armrests are crowned with leather-coated bakelite. The seat and back are made of tack leather, spanned with rope in the seam. A transverse rod has been added at the front for reinforcement. With the exception of the armrest protruding forwards, the chair is based on a single continuous line.

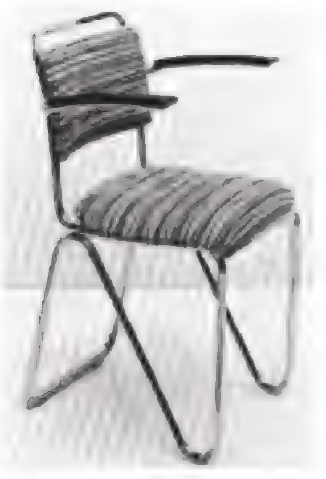
This model is the oldest design by designer-manufacturer Gispen (1890-1981) that was brought into production, and it is also one of the most original. The prototype was designed as far back as 1927, but it took until 1929 before the first mass-produced model was manufactured for the Van Nelle factory, in a few variants. The chair only became available to the general public at the end of 1930, because Gispen's first sales catalogue, entitled *Metalen meubelen cat. no. 50* (Metal furniture) only appeared in November 1930. The first version of this chair had short, stubby armrests and similar half-round caps. But the version in the collection, with longer, curved armrests and caps, was supplied to the conference room of the Van Nelle factory in 1930, and appeared in the Gispen catalogue no. 51 in 1931 as a variant of the 'easy chair no.4'. The chair remained in the Gispen collection until the beginning of the Second World War.

The basis design of the chair is the single continuous line, which forms two bracket-shaped legs at the front, then the seat and backrest frame, and subsequently runs across the floor to the other side at the rear. The tubing is welded together at the back of the seat and the back leg. The combination of the two bracket-shaped points of support with the transverse section along the ground ensures the stability of the chair. This is a modification of the principle that Rietveld used in 1927 for his *Beugelstoelen* (chairs with tubular steel brackets as legs), where the brackets form the four legs. Another modern feature is the overhanging rod at the rear, the *Oberabkröpfung* ('upper articulation') which Marcel Breuer applied to his chairs from 1926 onward. When leaning backwards, the person seated is not discomforted by a rod behind his/her back, and the rod is also convenient when moving the chair.

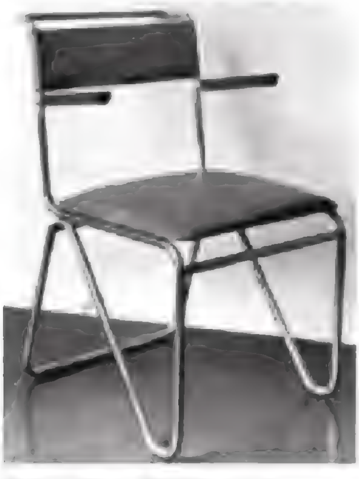
Gispen designed various versions of the basic model: a table chair and easy chair with or without armrests, with short or long armrests, and a table chair with 'closed' armrests. In 1930, Gispen also supplied a version entitled *Lautal* made of aluminium alloy to Hilversum Town Hall, but the quality of the alloy turned out to be dubious. A similar type of diagonal chair was also produced in Germany by the Bamberg company in 1932, but little is known about this chair.



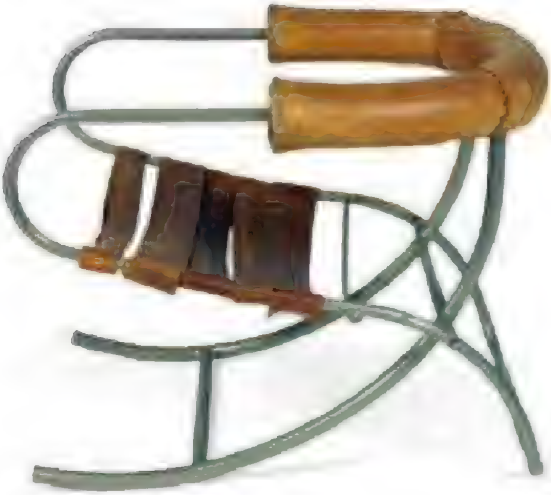
Luxury version of the Diagonal Chair, boardroom of the Van Nelle factory, Rotterdam, 1930. Source: J. Geurst, J. Molenaar: *Van der Vlugt, architect 1894-1936*, DUP, Delft 1983, p. 67.



Cor Alons, approx. 1935, Oostwoud, 9052

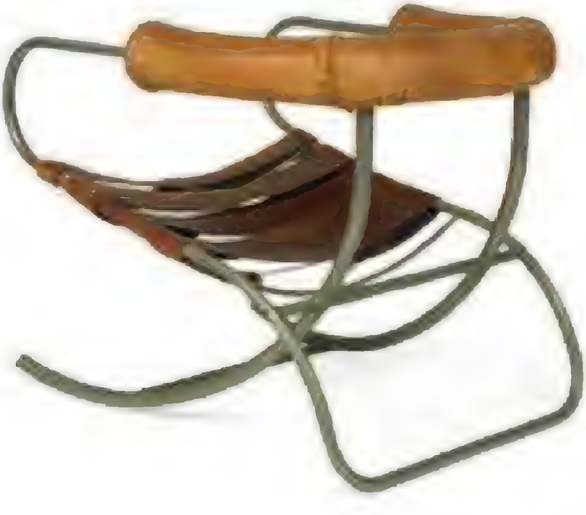


Willem H. Gispen, 1929, Gispen, no.3



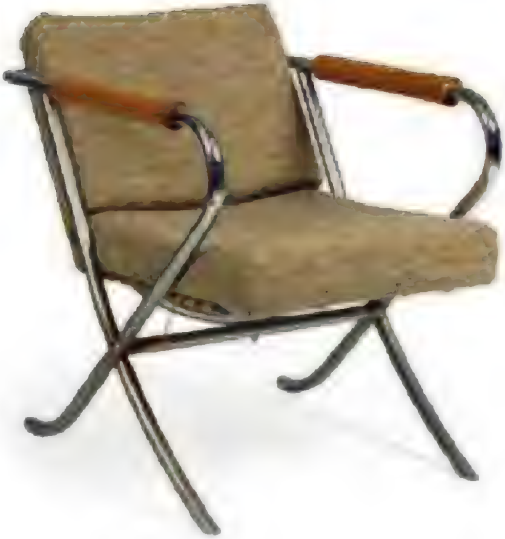
Auke Komter, easy chair, 1935 ante quam
Inv. no. 20032250, on loan from the NAI
Chrome-plated tubular steel; leather
34 × 63.5 × 68 × 79 cm; ø 20 mm
Unknown
Lit.: [M. Stam], 'De stoel gedurende de laatste 40 jaar', *de 8 en Opbouw*, 1935, no.1, p. 8; J. van Geest, O. Máčel & G. Oorthuys, *Metalen buisstoelen 1925–1940*, exhib. cat. Stedelijk Museum Het Prinsenhof, Delft, Amsterdam 1975, p. 31; J. van Geest & O. Máčel, *Stühle aus Stahl*, Cologne 1980, p. 152; O. Máčel, *2100 Tubular Chairs*, Rotterdam 2006, p. 150, VI-A-67

An experimental easy chair conceived in a single continuous line with two separate sections of tubing, and with a seat of leather strips. The rear legs, seat frame and armrests are formed by the single continuous line, the two sections of tubing extend forward from the back, forming skid-like front legs that are not connected at their ends. Accordingly, the easy chair acquires an interesting spatial shape but, as Mart Stam remarked in 1935, the sitting comfort is rather limited.



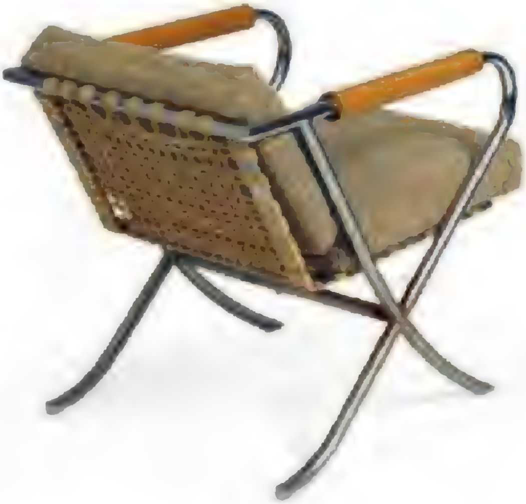
Jacobus Johannes Pieter Oud, easy chair, design May 1933, object 1934-1939
Inv. no. 20032260

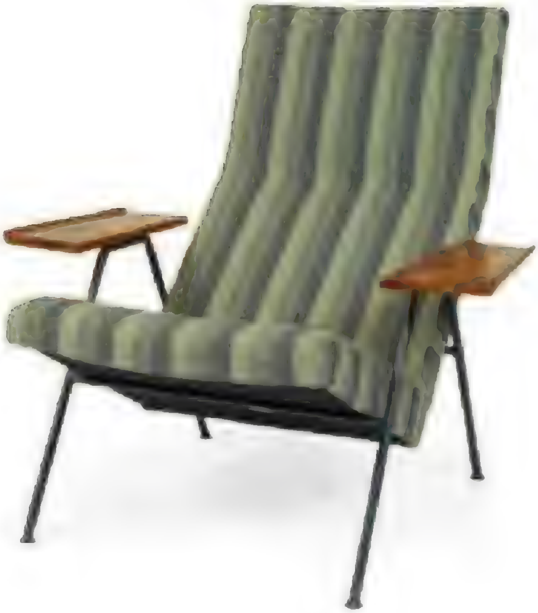
Chrome-plated tubular steel and strip; white cord, cushion stuffed with horsehair
42 × 67 × 54 × 83 cm; ø 24 mm
Unknown, manufactured for Metz & Co, Amsterdam, model 04, (1933 till 1939)
Lit.: J. van Geest & O. Máčel, *Stühle aus Stahl. Metallmöbel 1925–1940*, Cologne 1980, p. 101; E. Reinhartz-Tergau, *J.J.P. Oud architect. Meubelontwerpen en interieurs*, Rotterdam 1990, pp. 91, 96, 97, 100, 102; T. Overtoom, 'De geEIGENde VORM. J.J.P. Oud als ontwerper van stalen meubelen', in: *Jong Holland*, 1999, no. 3, pp. 33-37; E. Taverne, C. Wagenaar & M. de Vletter (eds.), *J.J.P. Oud 1890–1963. Compleet werk*, Rotterdam 2001, pp. 375, 376; O. Máčel, *2100 Metal Tubular Chairs*, Rotterdam 2006, p. 200, VI-C-142



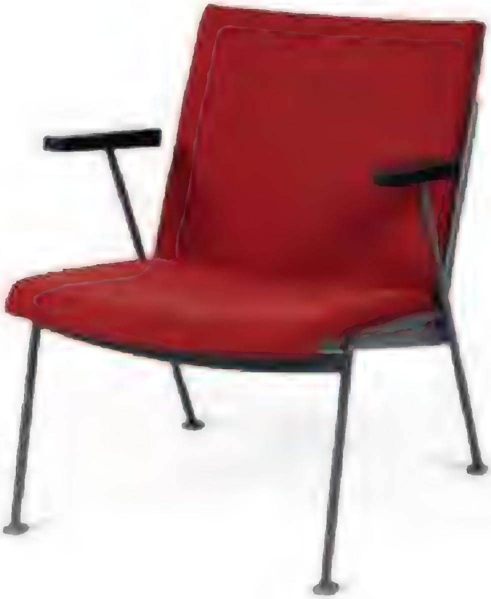
Armchair made of chrome-plated steel tubing with two separate cushions. The supporting frame forms the legs and armrests, while the seat-backrest with its structure of strip steel and white cord weave has been inserted between the supporting frame. The cushions, made of leather or textile, were filled with rubberized moth-resistant horsehair, and the caps on the armrests are often natural beech wood. Originally they could be supplied in any required colour.

The armchair is one of the four models which Oud designed for Metz & Co and which were exhibited in December 1933 in the Rietveld-designed Metz dome in Amsterdam. In contrast to Oud's earlier tubular steel designs for the Weissenhofsiedlung and for Villa Alegonda in Katwijk in 1927, there are no traces of De Stijl (The Style) aesthetics, and this armchair appears more voluminous and heavier, which resulted in criticism of Oud by his functionalist colleagues. But, in Oud's opinion, the chair ought to radiate stability and tranquillity. The construction of the armchair in the collection is remarkable – Oud has opted for the traditional hinge principle but, just like the *Barcelona Chair* by Mies van de Rohe, the chair does not fold. The diagonal legs are welded together.

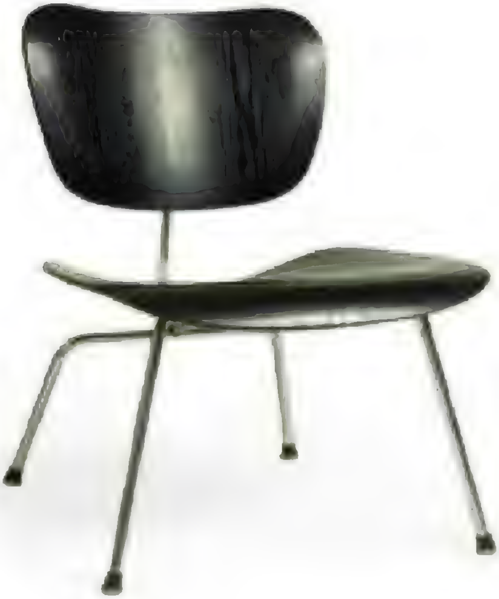




Robin Day, easy chair, 1952
Inv. no. 20032176
Steel rod, painted dark-grey; cherry wood, plywood, foam rubber, wool
45 × 90 × 90 × 95 cm; ø 16 mm
Hille, London
Lit: L. Jackson: *Robin & Lucienne Day, pioneers of contemporary design*, Mitchell Beazley, London 2001, p.67



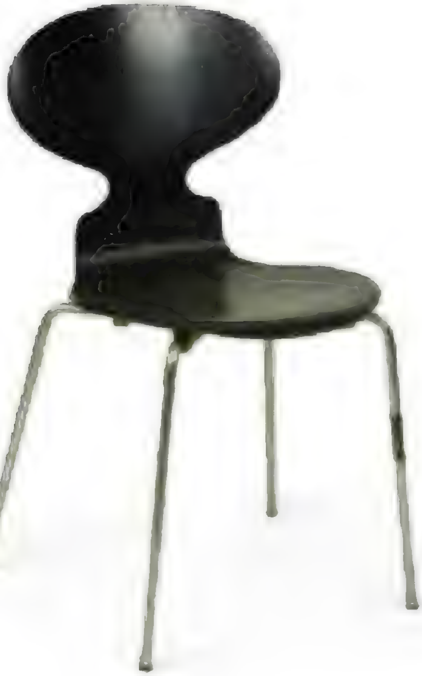
Wim Rietveld, easy chair (Oasis), 1958
Inv. no. 20032194
Steel rod, steel plate, lacquered dark-grey; foam rubber, wool
39.5 × 76.5 × 59 × 69.5 cm; ø 15 mm
De Cirkel, Amsterdam, 1958-1982
Lit: P. Vöge, B. Westerveld: *Stoelen. Nederlandse ontwerpen 1945-1985*, Amsterdam 1986, p.109; Ed van Hinte: *Wim Rietveld, industrieel ontwerper*, 010 Uitgevers, Rotterdam 1996, pp.38-41



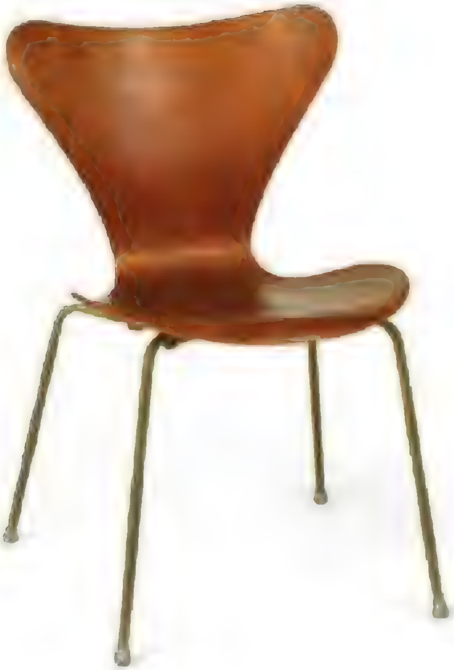
Charles and Ray Eames, easy chair (*Lounge Chair Metal*), design 1946, object 1949-1953
Inv. no. 20032117
Chrome-plated steel tube; black-lacquered plywood
37 × 71 × 56 × 60.5 cm ø 16 mm
Evans Products Company, Venice (California), 1946-1949; Herman Miller Furniture Co., Zeeland (Michigan), 1949-1953
Lit.: D. Ostergard (ed.), *Bent Wood and Metal Furniture 1850–1946*, exhib. cat. American Federation of Arts, New York 1987, pp. 168-169; K. Mang, *Geschichte des modernen Möbels*, Stuttgart 1987, pp. 138-140; D. Murphy (ed.), *The World of Charles and Ray Eames*, New York 1997, pp. 78-82; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 255.

A low chair made of chrome-plated tubular steel and black-lacquered ash plywood seat and back. The frame consists of two sections: two U-shaped tubes that form the front and rear legs, and a connecting piece that also supports the back.

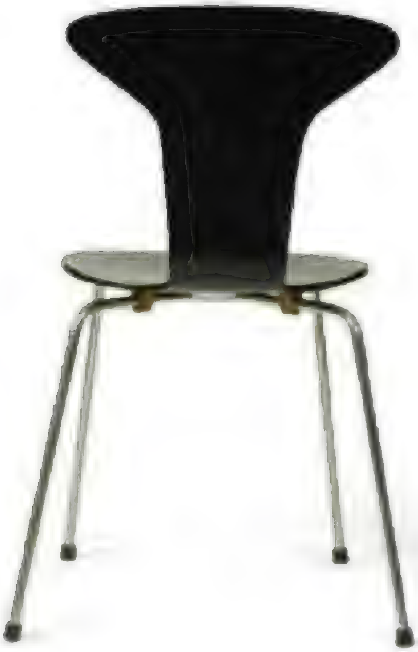
The concept of this chair was derived from the *Lounge Chair Wood* (LCW), a similar armchair made of plywood that the couple had designed a year previously. Here, too, the frame consists of three elements that support the seat and the backrest. The experience that Ray Eames gained in creating her plywood sculptures, in which she aimed to generate organic forms, undoubtedly played a role. For the metal version, the office experimented with various frames, on three legs or on two with a transverse rod, but eventually the four-legs option was chosen for mass production. Exceptional attention was paid to the connection of the seat and back with the steel tubing: rubber shock mounts were screwed on to the tubing and glued to the plywood, so that the connection between the two materials gained more emphasis. A higher table chair version was also created – *Dining Chair Metal* (DCM). The armchair and the table chair were first produced by Evans Products and later by Herman Miller.



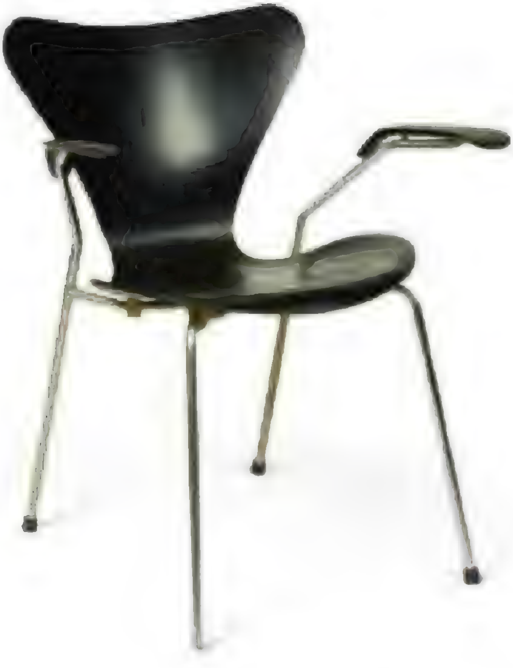
Arne Jacobsen, chair (*Myren*), design 1953,
object 1953 post quam,
Inv. no. 200232036
Chrome-plated tubular steel; lacquered plywood, rubber
43.5 × 78.5 × 49.5 × 47.5 cm ø 14 mm
Fritz Hansen, Copenhagen, model 3100
Version with four legs



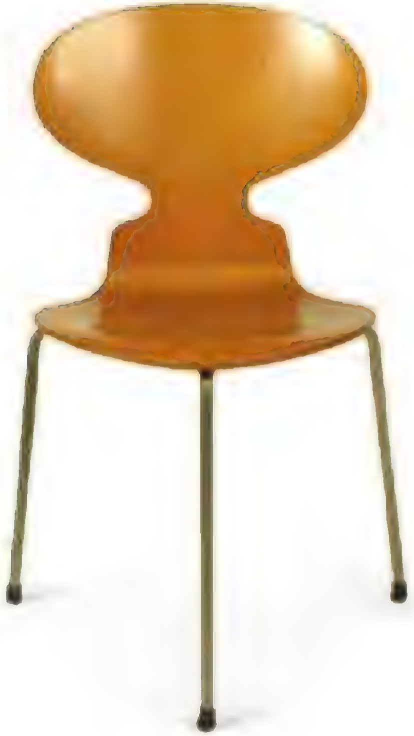
Arne Jacobsen, chair, design 1955,
object 1955 post quam,
Inv. no. 20032185
Chrome-plated tubular steel; lacquered plywood, rubber
43 × 75 × 45.5 × 49 cm ø 14 mm
Fritz Hansen, Copenhagen, model 3107



Arne Jacobsen, chair, design 1955,
object 1955 post quam,
Inv. no. 20032034
Chrome-plated tubular steel; lacquered
plywood, rubber
45 × 77.5 × 50.5 × 43.5 cm ø 14 mm
Fritz Hansen, Copenhagen, model 3105



Arne Jacobsen, chair with arm rests,
design 1955, object 1955 post quam,
Inv. no. 20032089
Chrome-plated tubular steel; lacquered
plywood, rubber
43 × 45 × 66 × 56.5 cm ø 14 mm
Fritz Hansen, Copenhagen, model 3107

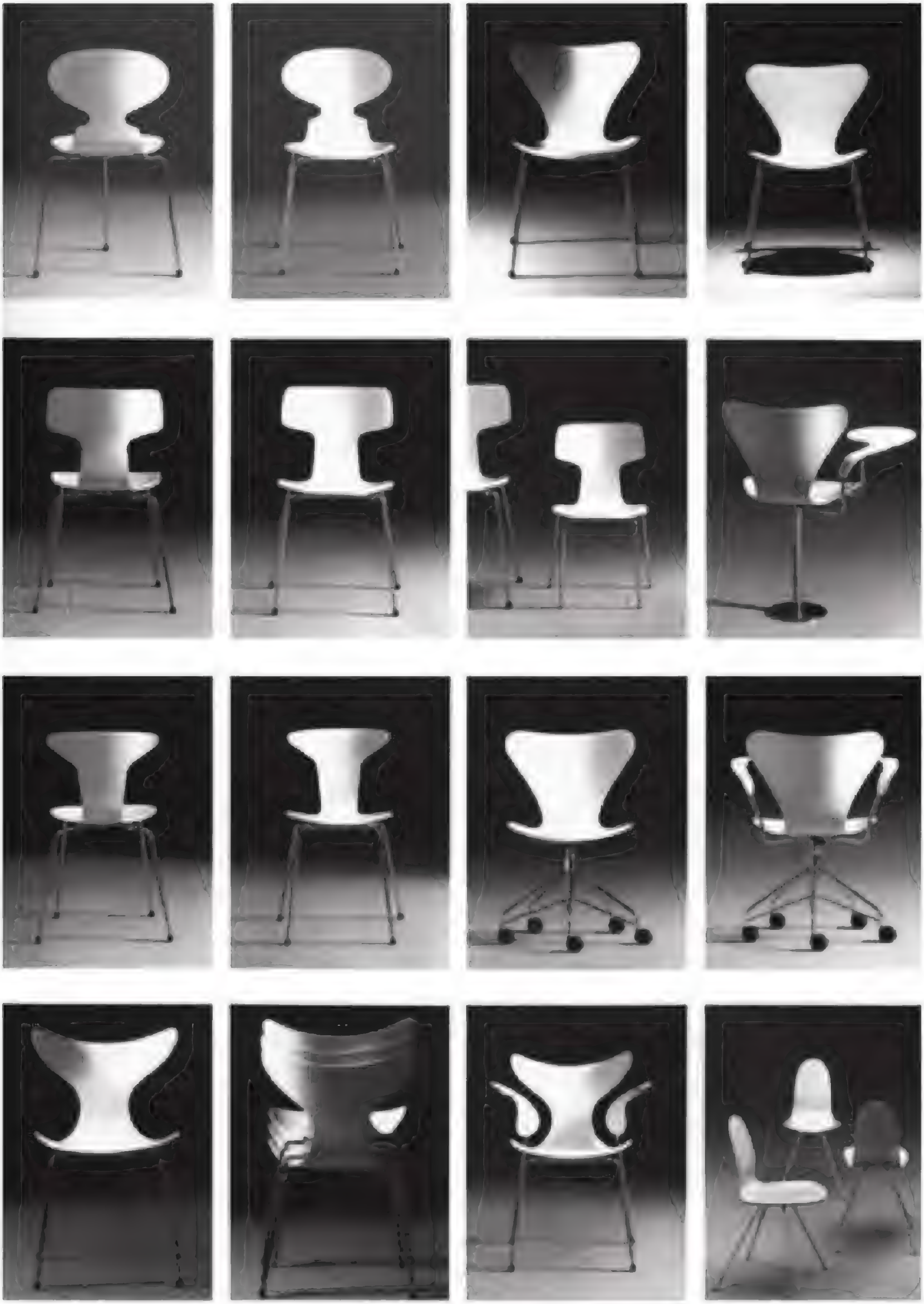


Arne Jacobsen, chair (*Myren*), design 1952, object 1952-1980 (?)
Inv. no. 20032035
Chrome-plated tubular steel; plywood, rubber
44.5 × 76.5 × 52 × 51 cm ø 14 mm
Fritz Hansens Eft., Copenhagen, model 3100, (1952 to present)
Lit.: A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 120-121; C. & P. Fiell, *1000 Chairs*, Cologne 2000, pp. 343-345; C. Thau & K. Vindum, *Arne Jacobsen*, Copenhagen 2001, pp. 386-396

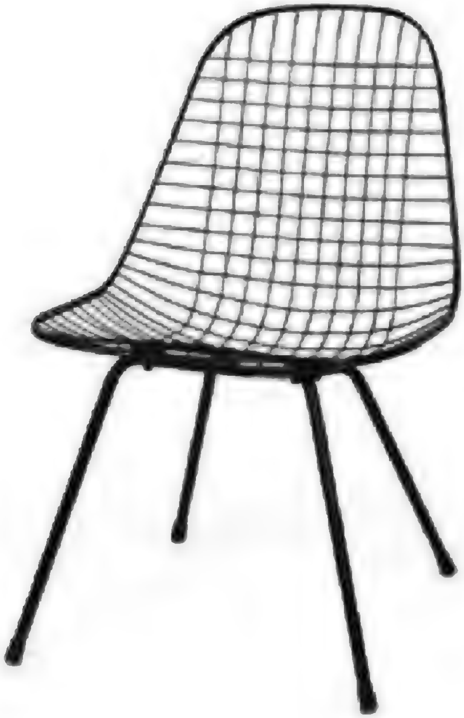
Simple, stackable chair on three tubular steel legs, with a seat and backrest made of a single piece of laminated wood. The tubes of the legs join under the seat, where they are held together in a round metal holder screwed to the seat. Rubber shock mounts have been applied between the seat and the legs. The seat and the back consist of a number of layers of beech wood, either varnished or natural. After 1955, the two outer layers were also available in teak veneer, oak, or rosewood. The narrowing of the backrest, where an extra layer was applied, made it possible to utilize the flexibility of the laminated wood to the full – no extra support in the backrest was necessary.

This *Ant ('Myren') Chair* was inspired by the *Organic Armchair* experiments of Eames and Saarinen in the USA (1940-41), and certainly also by the *Lounge Chair Metal* of the Eames couple (1946). An innovative element is the seat-backrest made of a single unit, without additional support in the back. With some reluctance, Jacobsen later designed a version with four legs, but later developed the chair further. In 1955, a version appeared with a simplified laminated seat-back on four legs (model 3105), and in that same year, Jacobsen designed the *Series 7*, also on four legs but with more variants – with and without armrests, and as a swivel and adjustable office chair. With the advent of this *Ant Chair*, Denmark witnessed the transition to industrial furniture production.

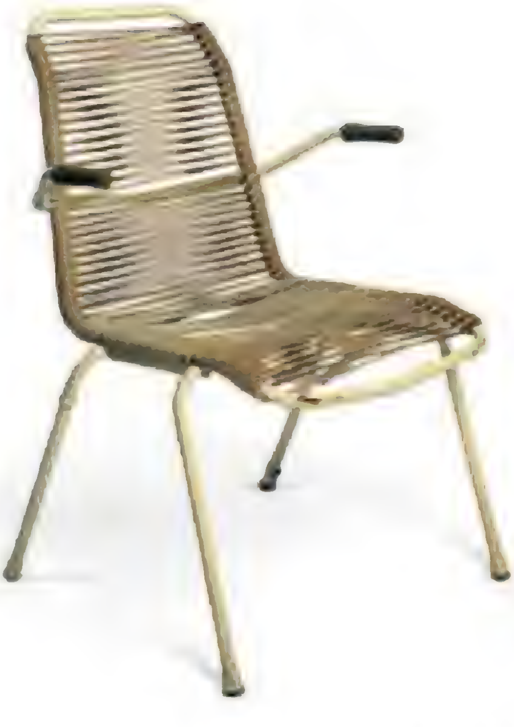
Of the *Series 7*, the collection contains the model 3217, the office chair, and the model 3107, with and without armrests. This model, also referred to as the *Butterfly Chair*, has a different back profile, and the seat curves lightly downward at the front. The variant with armrests has extended back legs that form the end of the armrests. The caps of the armrests are fixed to metal plates that are welded to the armrests. The Fritz Hansen company was the manufacturer of these chairs right from the outset.



The development of and variations on the Ant Chair by Arne Jacobsen between 1952 and 1969. Source: F. Solaguren-Beascoa, *Jacobsen*, Santa & Cole, Gili, Barcelona 1991, p 129

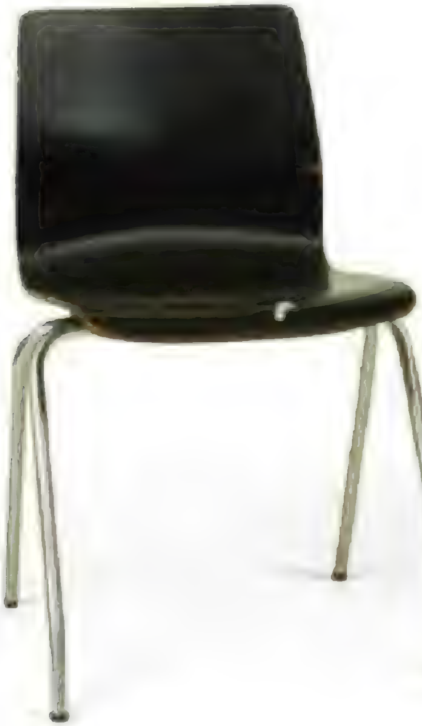


Charles Eames, chair, 1951
Inv. no. 20032002
Enamelled tubular steel and rod
77.5 × 47 × 55.5 × 40 cm; ø 16 mm
Herman Miller, Zeeland, Michigan
Lit.: *Modern Chairs 1918–1970*, exhib. cat. Whitechapel Art Gallery, London 1970



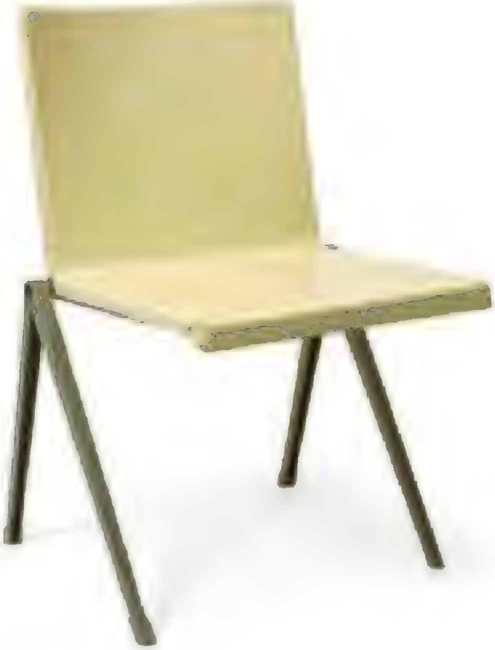
Kho Liang Ie, chair with arm rests, about 1960
Inv. no. 20070007
Lacquered tubular steel; plastic cord
42 × 82 × 60 × 62.5 cm; ø 19 mm
CAR, Katwijk
Lit.: I. van Ginneke, *Kho Liang Ie*, Rotterdam 1986, p. 93

A white-lacquered tubular steel chair with a seat, made of a single continuous line and three U-shaped tubular sections. Two of them form the front legs and the other forms the armrests. The legs have rubber floor gliders, while the armrests have a rubber 'glove'. The spanning of the seat with plastic cord was a new feature that made the chair weather-resistant. However, the plastic cord soon became stretched. The tubular frame of the model in the collection deviates a little from the model in the literature.

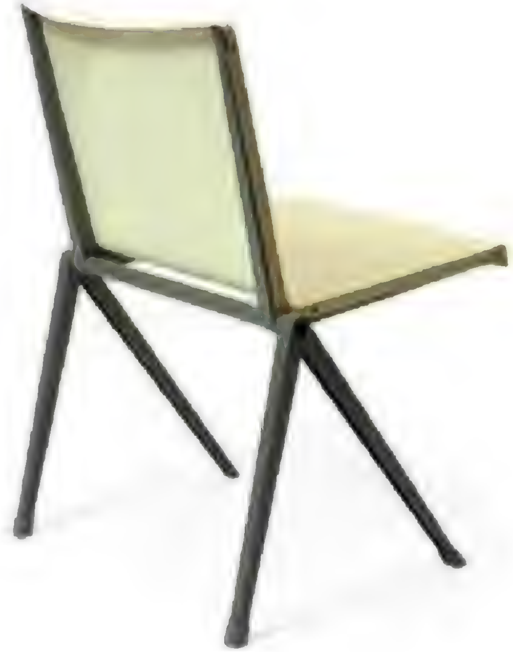


Kho Liang Ie, chair, 1967
Inv. no: 20032069, 20032046
Chrome-plated tubular steel; black-lacquered plywood
47.5 × 82 × 49.5 × 49.5 cm; ø 19 mm
Stabin Bennis, later CAR model 6106
Lit.: P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, p. 121

Gerrit T. Rietveld, Wim Rietveld, chair (*Mondial*), design 1956-57, object 1957-1958
Inv. no. 20032072
Enamelled steel sheet; polyester
43.5 × 78.5 × 50 × 56 cm
Gispen n.v., Culemborg, model 117 Mondial, (1957-1958; from 2006)
Lit.: M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib. cat. Centraal Museum, Utrecht 1992, p. 285; P. Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 158-159; J. Venneman & M. de Kroon (eds.), *Mondial, Gispen & Gerrit Th. Rietveld*, Culemborg 2006
Donation from G.T. Rietveld, 1964



Chair with steel seat, covered in polyester. The V-shaped legs, made of folded steel sheeting, are connected to one another under the seat by means of a 25 ø mm section of tubing. The design was intended for the World Exhibition in Brussels in 1958, which is the reason for its name. Rietveld worked on the design with his son Wim, who was working with the Gispen company at that time. Their design was conceived with an aluminium seat, but Gispen opted for a version in polyester. This decision led to a schism with the designers and Wim Rietveld left the firm. The chair, of which there was also a variant with armrests, was not a commercial success. In 2006, Gispen issued the chair in its original version.



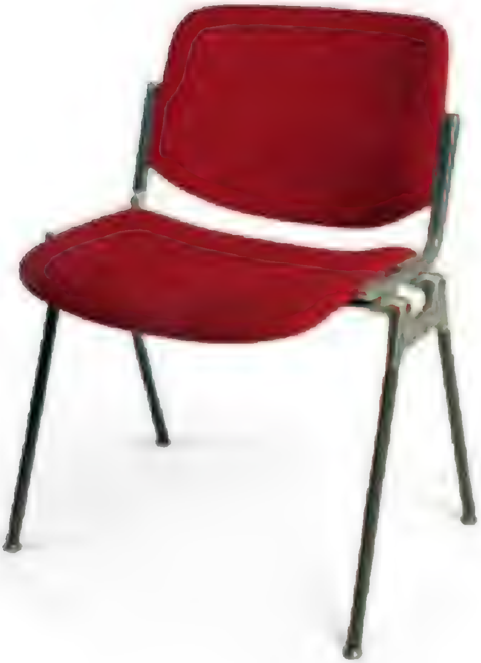
POLYESTER STOEL 117 EN ARMSTOEL 217

Geprofileerd plaat-stalen frame grijs no. 10 gelakt en gemoffeld; plastic vloerdoppen. Zitting en rug van polyester uit één stuk geperst, in rood, wit, geel, blauw of anthraciet-grijs. Armleuningen grijs bakeliet. Deze stoel is stapelbaar en koppelbaar; het ranke frame is sterk en veerkrachtig, waardoor stevige stand, ook op oneffen vloeren. Universeel bruikbaar: in kantoren, cantines, zalen, wacht- en spreekkamers, restaurants, winkels, maar ook in de huiskamer of kinderkamer.

„POLYESTER"

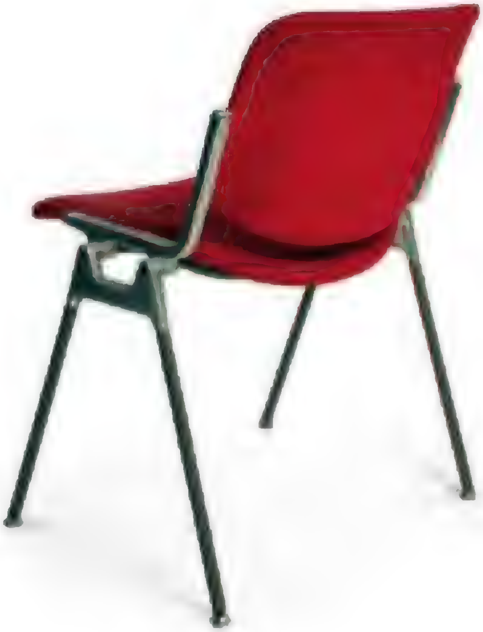
Polyester is een kunstharsproduct, dat in hoge mate onaantastbaar is; het is weer- en chemicaliënbestendig. Door wapening met glasvezels bovendien zeer sterk. Polyester is hard (krasvast) en kan door en door gekleurd worden.

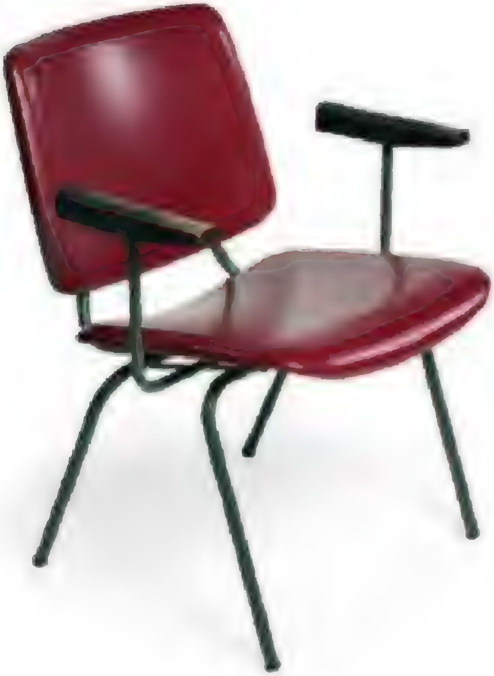
The Mondial Chair in Gispen's 'loose-leaf catalogue of office furniture 1957-1958'. Source: Rietveld Archives, NAi.



Giancarlo Piretti, chair, 1965
Inv. no. 20070011
Enamelled tubular steel and cast aluminium; plywood upholstered with red wool
46.5 × 77.5 × 57 × 56 cm ø 18 mm
Anonimi Castelli, Bologna, model DSC 106
Lit.: D.G.R. Carugati, *Giancarlo Piretti*, Milan 2003, pp. 101–19

A chair designed for halls and meeting places. The chairs could be linked together in the hall and subsequently stacked up. A corner piece made of cast aluminium connects the seat to the backrest, while another cast aluminium section links the tubular steel legs. The legs rest upon small steel feet that have been inserted into the ends of the tubing. The chair was available with various types of armrests, with a drop-leaf table or with a basket under the seat. Originally, the Castelli company produced only wooden furniture but, inspired by the design of the *106*, they adopted the technology required to make cast-metal furniture.

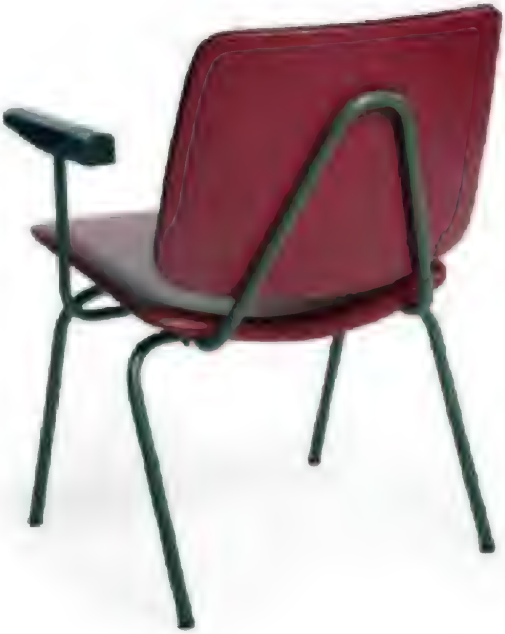


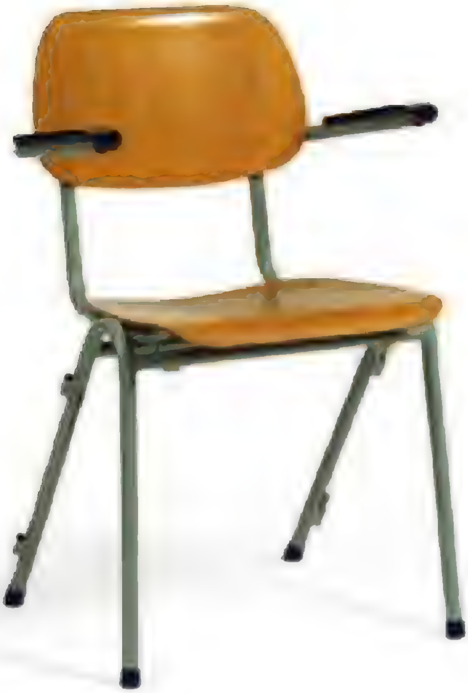


Kho Liang Ie, easy chair, 1957
Inv. no. 20070009
Grey-lacquered tubular steel; plywood upholstered with red leatherette, black-lacquered wood
43 × 78 × 59 × 60.5 cm; ø 19 mm
CAR, Katwijk, model 315
Lit.: I. van Ginneke, *Kho Liang Ie*, Rotterdam 1986, p. 93; P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, pp. 106-107

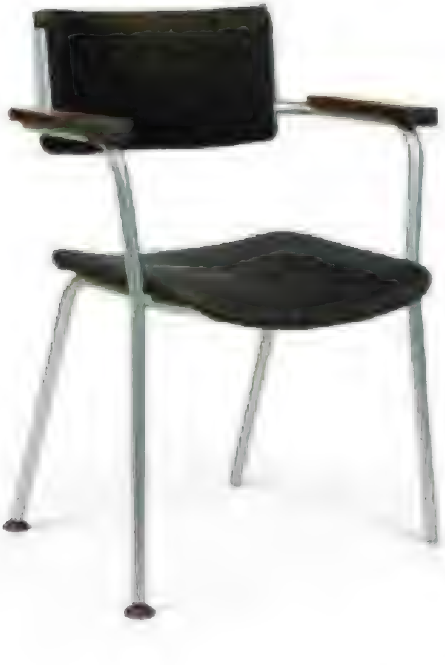
A simple chair, ideal for industrial production, made of four sections of grey-lacquered steel tubing with a plywood seat and backrest covered with red leatherette. Two U-shaped sections of tubing form the chair legs, the third supports the short, black-lacquered wooden armrests. A V-shaped section supports the backrest. All steel sections are welded to a thin steel rod under the seat. The frame is based on an earlier chair dating from 1957 (model 305/315).

The easy chair was produced by the *CAR* (C.A. Ruigrok) company, which manufactured budget-oriented chairs for canteens, meeting halls, offices, and open-air cafés.

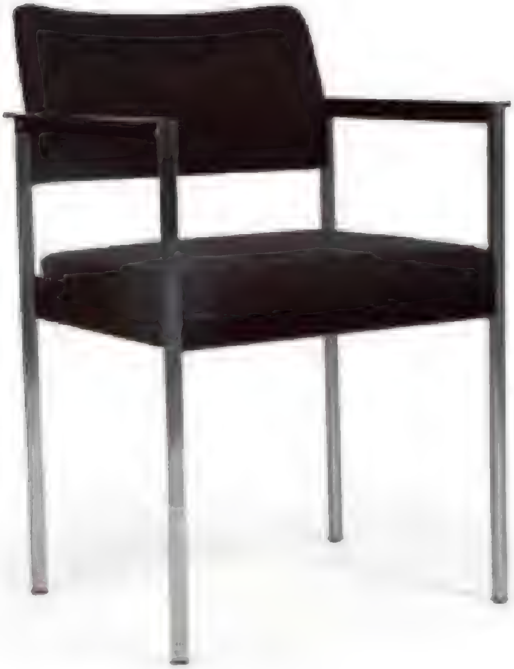




Anonymous, chair, before 1956
Inv. no. 20032145, 20032131 (with armrests 223/S)
Grey-enamelled tubular steel; bright lacquered plywood
47 × 84 × 47 × 50.5 cm; ø 22 mm
Marko, Veendam, model 123/S



Anonymous, chair with armrests, 1950s
Inv. no. 20032198
Chrome-plated tubular steel; plywood and fabric
43 × 81 × 61 × 50.5 cm; ø 22 mm
De Cirkel (?)

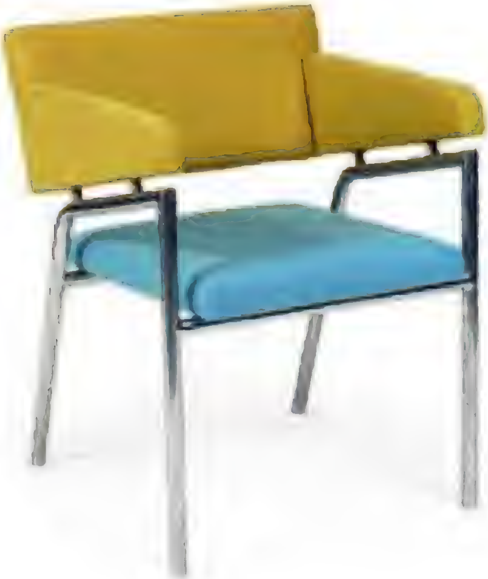


Kho Liang Ie, chair with armrests (Triangle), 1966
Inv. no. 20070013

Steel profile, chromed; folded and profiled steel plate, black enamelled, foam rubber, upholstery
47 × 79.5 × 55 × 51.5 cm; profile depth 21 mm
CAR, Katwijk
Lit.: I. van Ginneke: *Kho Liang Ie*, Uitgeverij 010, Rotterdam 1986, pp.49, 94; L. Dosa Delfini: *The Furniture Collection of the Stedelijk Museum Amsterdam*, NAi Publishers, Rotterdam 2004, p.192
Donation from Mr Meijer, 2007

The chair has four chromed profiled steel sections as legs. The seat consists of a cushion lined with a black textile that falls within the black edges of folded steel plate, with a bottom of profiled steel plate. Both the front and the back of the backrest are upholstered in the same fabric. The armrests also consist of folded steel plate.

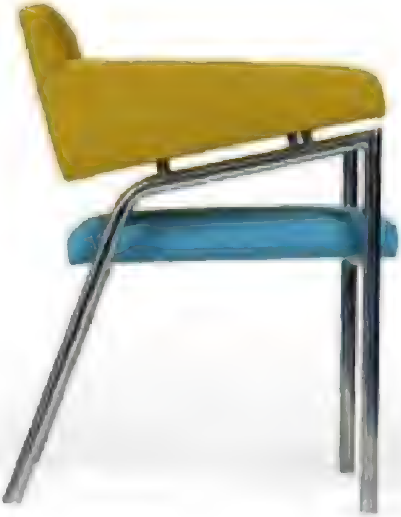
The name Triangle refers to the triangular cross-section of the legs. Four variants of the Triangle chair were produced, including one without armrests that is identical to the example in the collection. Large numbers of these chairs were produced, and it has been used in the interior of Schiphol Airport, which was also designed by Kho Liang Ie.

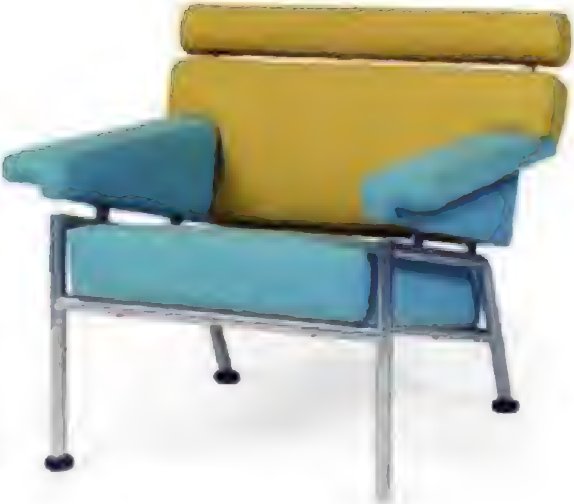


Jacobus Johannes Pieter Oud, high easy chair, design 1954, objects acquired after 1985
Inv. no. 20032247, 20070022
Chrome-plated tubular steel; foam rubber and fabric
45.5 × 75 × 57 × 58.5 cm ø 26 mm
Unknown, possibly Allan, Rotterdam
Lit.: E. Reinhartz-Tergau, *J.J.P. Oud architect. Meubelontwerpen en interieurs*, Rotterdam 1990, pp. 159-165; T. Overtoom, 'DE geEIGENde VORM. J.J.P. Oud als ontwerper van stalen meubelen', in: *Jong Holland*, 1999, no. 3, pp. 43-44; E. Taverne, C. Wagenaar & M. de Vletter, *J.J.P. Oud 1890–1963. Compleet werk*, Rotterdam 2001, pp. 438, 446
Loan from NAI

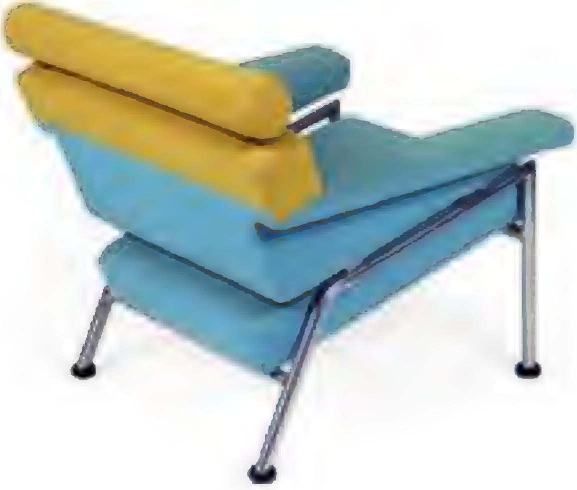
A high easy chair made of chrome-plated tubular steel on four legs, with a seat and backrest of foam rubber and textile covering. Oud also designed a model with a low backrest (see next page). Both easy chairs have the same construction: they are supported on either side by two sections of steel tubing where each section forms a front leg and a diagonal rear leg. The seat has been mounted on two transverse tubular sections between these. The armrests and backrest form a single unit and are fixed by means of two small pieces of tubing on the top of the supporting frame. This style of mounting resembles that of the chair Oud presented at the *Weissenhofsiedlung*. The seat is upholstered with mixed light-blue fabric, while the backrest and armrests are of mixed yellow fabric. The low easy chair has a rounded headrest.

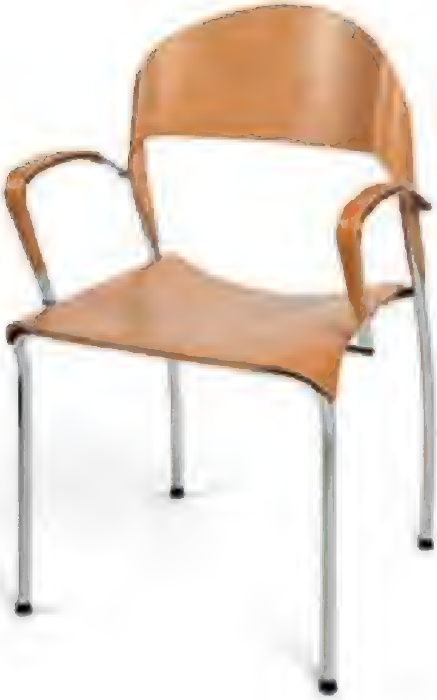
Oud designed the easy chairs for the conference room of the *Spaarbank van de stad Rotterdam*. The plans for the bank were completed in 1943, but the construction was only finished in 1957. Originally the easy chairs were upholstered in artificial leather, but they were given textile upholstery by the *Pander* company during a renovation in 1985.





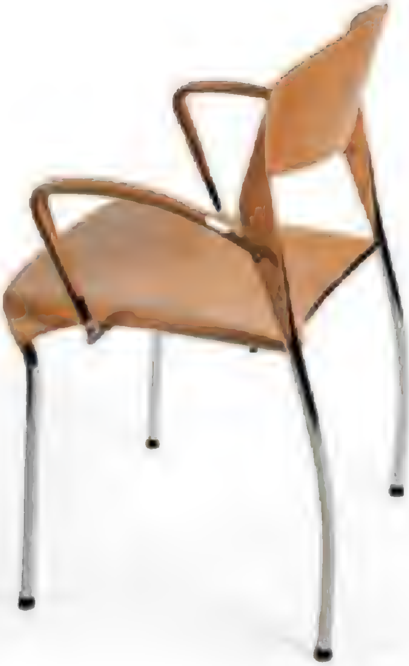
Jacobus Johannes Pieter Oud, low easy chair, design 1954, objects acquired after 1985
Inv. no. 20032243, 20070021
Chrome-plated tubular steel; foam rubber and fabric
42 × 75 × 77.5 × 76 cm ø 26 mm
Unknown, possibly Allan, Rotterdam
Lit.: E. Reinhartz-Tergau, *J.J.P. Oud architect. Meubelontwerpen en interieurs*, Rotterdam 1990, pp. 159-165; T. Overtoom, 'DE geEIGENde VORM. J.J.P. Oud als ontwerper van stalen meubelen', in: *Jong Holland*, 1999, no. 3, pp. 43-44; E. Taverne, C. Wagenaar & M. de Vletter, *J.J.P. Oud 1890–1963. Compleet werk*, Rotterdam 2001, pp. 438, 446
Loan from the NAI

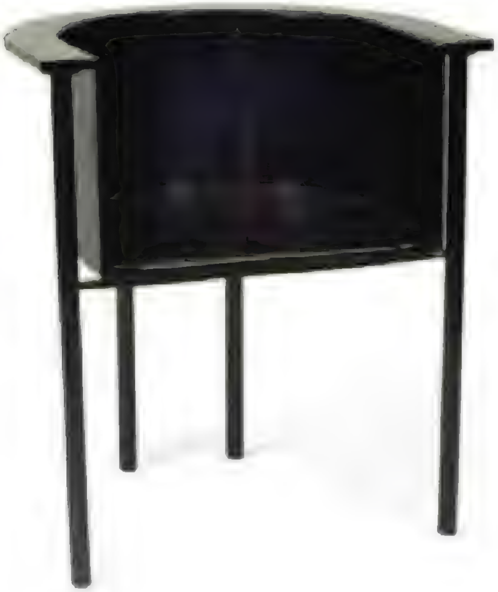




Krijn Hamelink, chair with arm rests (*Cadiz*), design 1994, object 2006Inv. no.20070003
Chrome-plated tubular steel; plywood
47 × 84 × 54 × 50 cm ø 19 mm
CAR, Katwijk, model Cadiz; RBM Fjerritslev, Denmark (from 2005 onward)
Lit.: RBM factory brochure

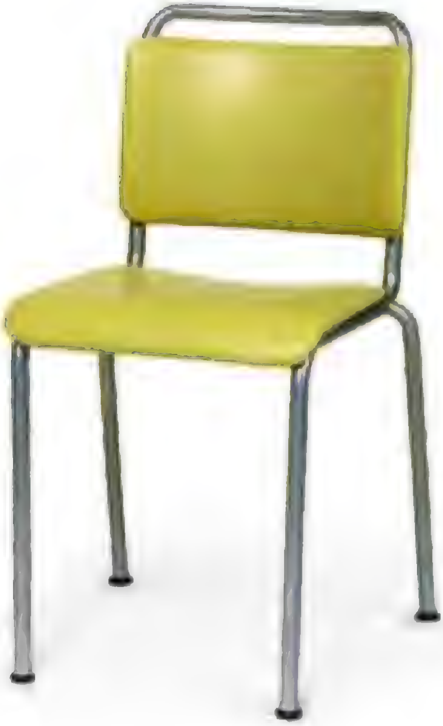
An office chair that is also available in a version without armrests. The frame consists of a U-shaped tubular section for the front legs, two separate tubes for the rear legs and back, and two pieces of steel strip for the armrests. Welded connections under the seat, linking the rear legs with the armrests, hold all the sections together. A remarkable feature is the connection of the plywood backrest to the rear legs: the wood embraces the ends of the tubes.



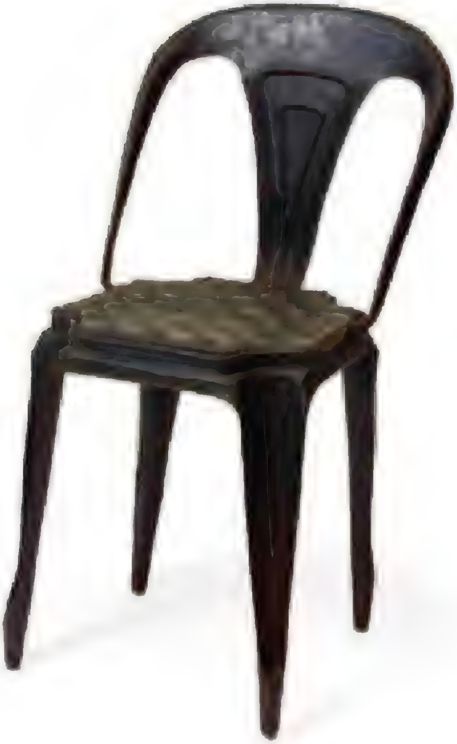


Jan Verbeek, chair with arm rests (*Tomeloos*), 1987
Inv. no. 20032039
Black-lacquered tubular steel; plywood
44.5 × 71 × 62 × 49 cm; ø 27 mm
Streelder, Amsterdam (metal); Hoff, Zaandam (wood)

A tub chair designed for the *Tomeloos* café at the Overtoom in Amsterdam. The four tubular steel legs extend up to the armrests and are connected under the seat by three steel strips. The seat is made of plywood, partly sawn out, partly moulded. A narrow strip of plywood, bent outward, forms the armrests. The interior of the café was changed in 1997.

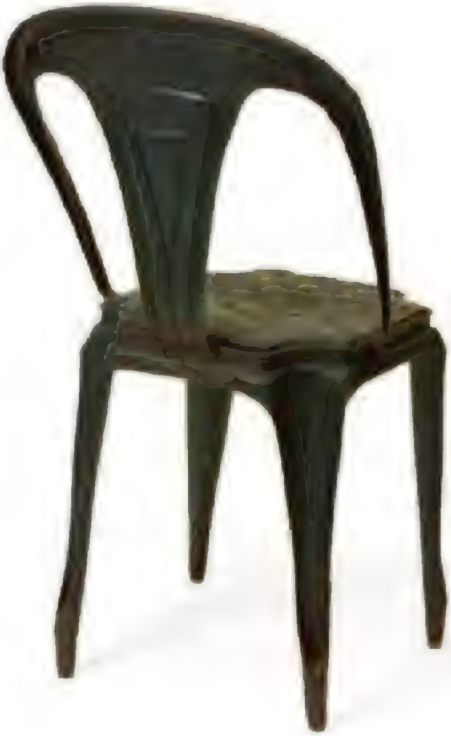


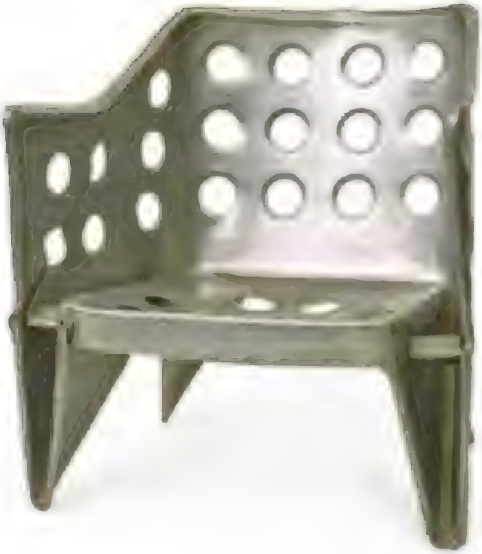
Anonymous, chair, 1950s
Inv. no. 20032005
Chrome-plated tubular steel; plywood and leatherette
48.5 × 83 × 41 × 52 cm ø 22 mm
Gispen, Culemborg



Anonymous, chair, 1920
Inv. no. 20032012
Lacquered steel sheet, caned wooden frame in white and blue
47 × 84 × 44 × 51 cm
Societé Industrielle des Meubles Multiples, Lyon, chaises à emboitement série C3
Lit.: *Der Stuhl*, exhib. cat. Städtisches Ausstellungsgebäude, Stuttgart 1928, p. 6; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 26-27

A classical French café chair made of thin steel sheeting. The semi-circular, pressed steel tops of the legs reinforce the stability and also allow the chair to be stacked. Wooden chocks have been placed in the ends. This range was implemented in a few variations, mainly differing in terms of the type and pattern of the smooth seat. It is difficult to date this chair because this type of chair was made over a lengthy period. A version was displayed at the *Der Stuhl* exhibition in Stuttgart in 1928.



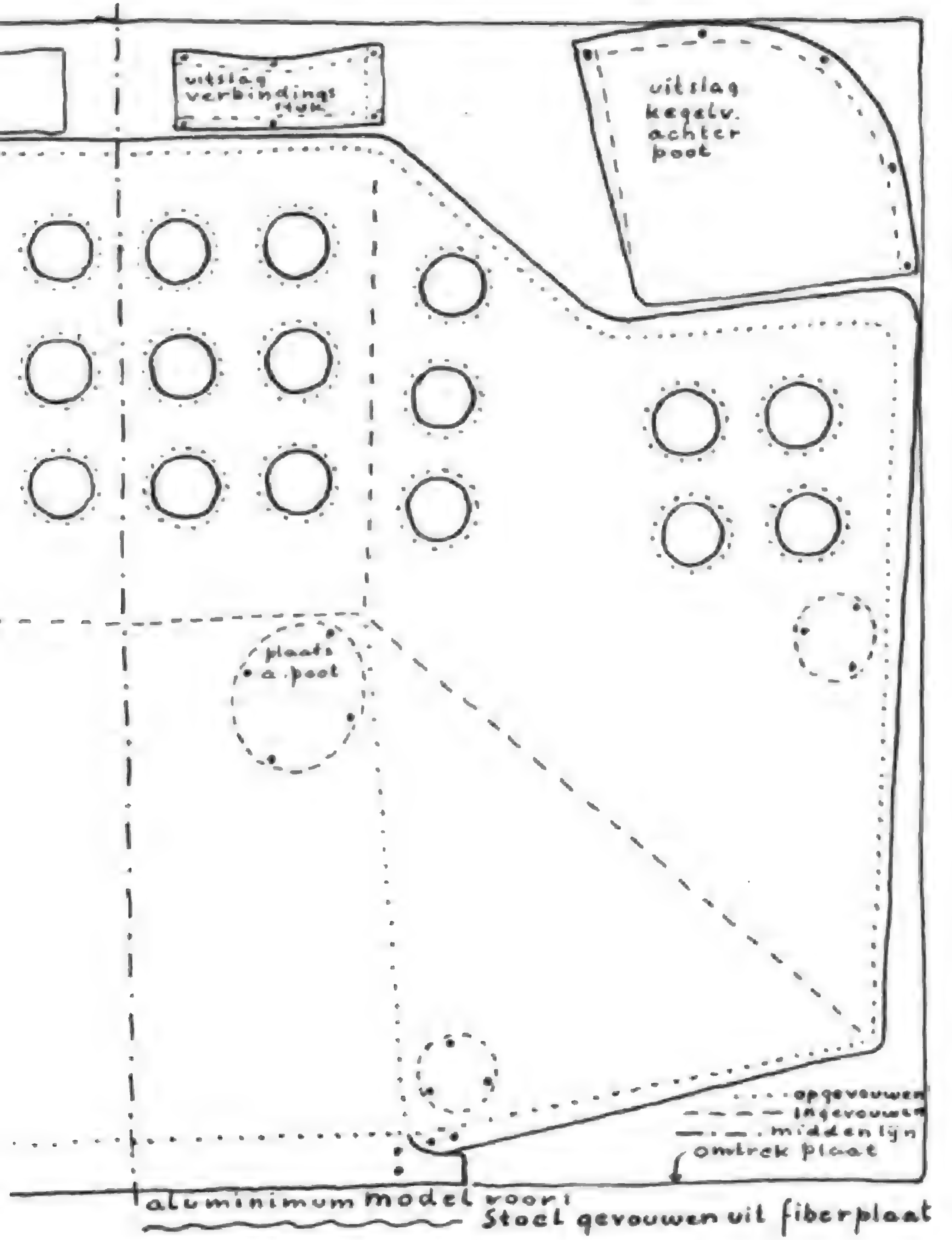


Gerrit Thomas Rietveld, easy chair, design: end of 1930s; object: 1960
Inv. no. 20032021
Aluminium plate
32.5 × 69 × 67.5 × 64 cm
G. Rietveld, Epe
Lit.: T.M. Brown, *The Work of G. Rietveld*, Utrecht 1958, pp. 121, 182; D. Baroni, *I mobili di Gerrit Rietveld*, 1977, pp. 128-129; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib. cat. Centraal Museum, Utrecht 1992, pp. 197, 209; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 82-83; P. Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 118-119; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 251
Donation from G.T. Rietveld, 1964

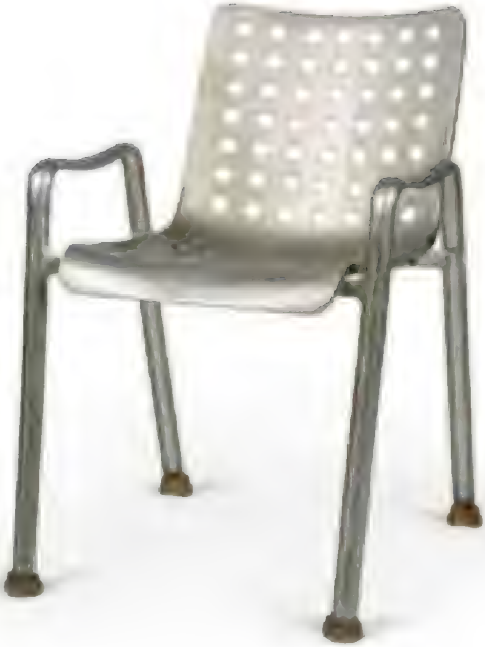
A tub chair, beaten in aluminium plate, turned at the edges. The plate is perforated with 12 holes in the backrest and 7 in each armrest. These holes are not purely decorative, the rims of the holes help reinforce the plate. The joints are riveted. The front legs are created by folding the plate, while the rear legs are conical.

In the second half of the thirties, Rietveld engaged himself with the issue of how to create items of furniture that could be constructed by means of folds. Some precursors, such as the *Birza Chair* made of fibreboard and dating from 1927, indicate Rietveld's earlier interest in this approach. A plywood version of the *Zigzag Chair*, dating from 1938, is also an example of his focus. Rietveld produced a number of drawings showing not only chairs but also tables and a bed. In addition, he also made trial models of Plexiglas and aluminium, and one drawing from the archives of the Netherlands Architectural Institute shows the form of the later aluminium armchair.

In 1942, Rietveld actively began on the implementation of these concepts. Aluminium was scarce during the war, and according to Gerrit Oorthuys, Rietveld used aluminium from crashed aircraft for the two prototypes. In 1960, Gerrit Rietveld jun. produced three models in his instrument factory in Epe. As occurred more often, practical problems arose during Rietveld's experiments: the aluminium plate began to tear at the corners, a problem similar to what had happened with Hans Coray's *Landi Stuhl* (p. 76). And the armchair was not yet quite ready to assume pride of place in a living room – further improvement was necessary. However, this never happened. Although outsiders welcomed Rietveld's idea of easily manufactured industrial furniture and the armchair was displayed at the Salon des Artistes Décorateurs in Paris in 1948, industrial production never got off the ground.



Drawing by Rietveld showing the cutting and folding lines of the aluminium chair. The title indicates that this aluminium version was a preparatory step for a definitive chair made of fibre plate. Source: Rietveld Archives of NAi.



Hans Coray, chair with arm rests (*Landi-Stuhl*), design 1938, object 1939-1962
Inv. no. 20032014

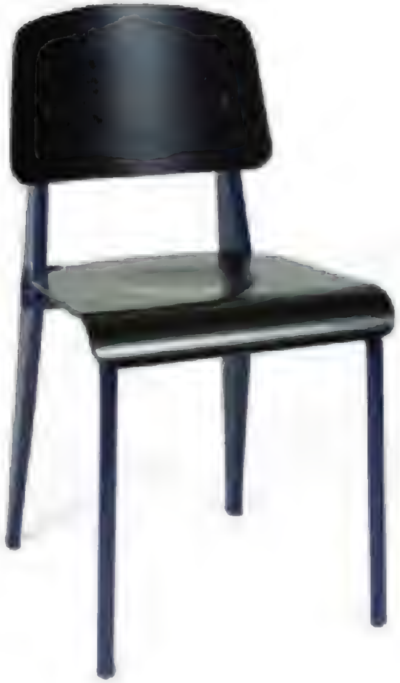
Bent and pressed aluminium
43 × 74.5 × 52 × 68 cm
P. & B. Blatmann Metallwerke, Wädenswil (1939-1999);
Zanotta s.p.a., Nova Milanese (1970-?), model 2070 Spartana; MEWAMETALight A.G., Wädenswil, (1999-2001)

Lit.: J. Brühlmann & P. Eberhard, *Hans Coray. Künstler und Entwerfer*, exhib. cat. Museum für Gestaltung, Zurich 1986, pp. 158-159; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, p. 34; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 250; A. Rüegg (ed.), *Schweizer Möbel und Interieurs im 20. Jahrhundert*, Basle/Boston/Berlin 2002, pp. 158-159

A simple aluminium chair, consisting of five components: two chair legs, which also form the armrests, two transverse connections, and the perforated plate of the seat-backrest. The legs are made of half-round aluminium segments and are connected by transverse bars at the front and back. The most modern welding technique was applied – the *Argon Schutzgasschweisung*. The thin, perforated aluminium seat was screwed to this frame, simultaneously forming the backrest. The perforation meant that less metal was needed and the chair was thus lighter. This technique had been borrowed from Zeppelin construction. The perforations in the *Landi-Stuhl* formed two rectangles: the seat had 42 holes and the back 49 holes, making a total of 91. From 1962 onward, the chair was produced with 60 perforations, a change that enhanced the stability of the chair. The legs of the chair had no terminating pieces, but were filled with wood cement or synthetic material. Rubber floor gliders (studs) have been used since the end of the fifties.

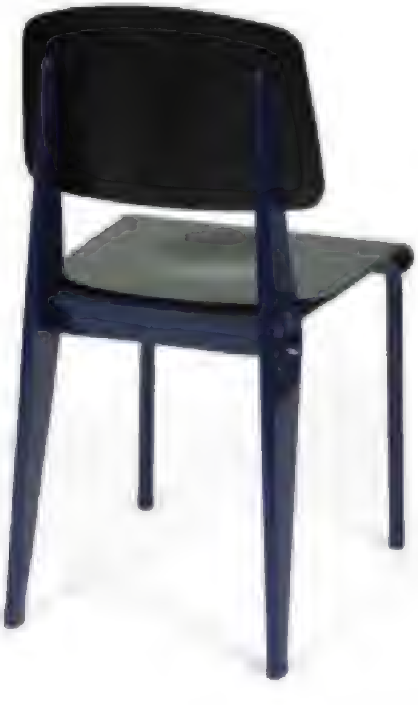
For the *Landesausstellung* (Swiss National Exhibition) in Zurich to be held in 1939, the exhibition architect Hans Fischli organized a design competition for a chair for the Exhibition. The chair had to be realized in aluminium, because aluminium was an important Swiss export product. Fifteen hundred models of the chair would be manufactured. The winner turned out to be a PhD in Romance Studies: Hans Coray (1906-1991), who was an autodidact in designing. His wire model was implemented by the P. & W. Blattmann Metallwarenfabrik company in Wädenswil and became a major success. Coray later designed other chairs, but he was never able to equal the success of his *Landi Chair*.

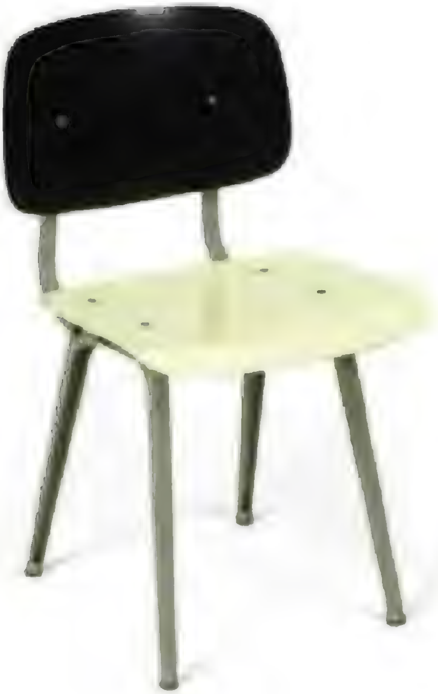
The use of aluminium or aluminium alloy in Europe occurred mainly in France and Italy (anticorodal, cromalluminio) since the early thirties, but genuine innovation only took place with Marcel Breuer's winning design for the aluminium design competition in Paris in 1933 (see p. 38). In contrast to Breuer's flexible concept, Coray's chair is firmly based on four legs and is not flexible; but the innovative feature was the seat form made of hard material.



Jean Prouvé, chair (*Cafeteria*), design 1950, object about 1990
Inv. no. 20032007
Lacquered tubular steel and folded steel sheet; lacquered plywood
46 × 81 × 41 × 46 cm
TECTA, Lauenförde (1983-2000); original Société des Ateliers Jean Prouvé, Maxéville, no.300 Cafeteria (1950-1959)
Lit.: J. van Geest, 'Meubels', in: W.A.L. Beeren et al. (eds.), *Jean Prouvé constructeur*, exhib. cat. Museum Boymans-van Beuningen, Rotterdam 1981, p. 40; J. van Geest, *Jean Prouvé. Möbel = Furniture = Meubles*, Cologne 1991, p. 55; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 200; J. van Geest, 'Das "Anti-Design" van Jean Prouvé', in: A. von Vegesack (ed.), *Jean Prouvé. Die Poetik des technischen Objekts*, exhib. cat. Vitra Design Museum, Weil am Rhein 2006, pp. 305, 310

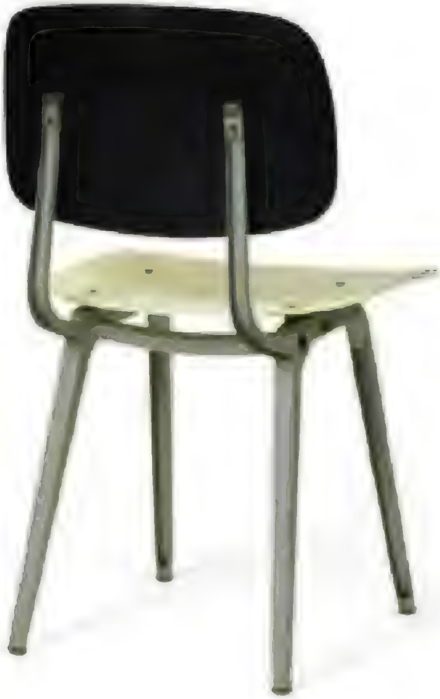
A table chair made of lacquered steel tubing and folded steel sheeting, with a seat and backrest of plywood. The chair is sectional. The original design, which was not sectional at that time, dates from the early thirties and Prouvé elaborated various versions of this chair in the following twenty years, including one with cast-aluminium rear legs and one with armrests. During the war, the chair was 'translated' into a wooden version.

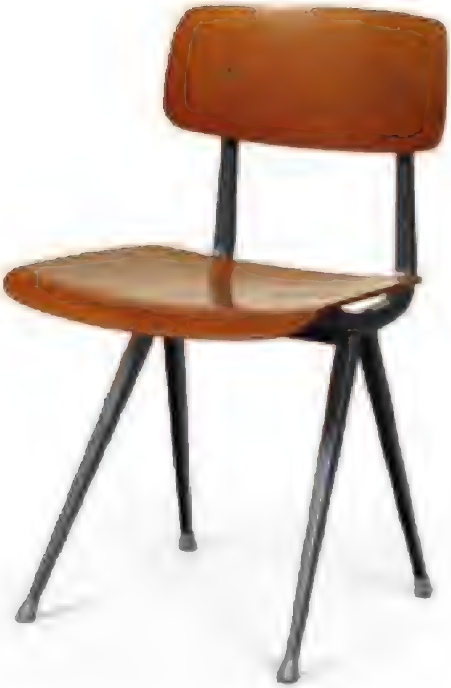




Friso Kramer, chair (*Revolt*), design 1953, object before 1994
Inv. no. 20032146; 20032200 with armrests
Enamelled folded steel sheet; fibre
45 × 81.5 × 45 × 49.5 cm
De Cirkel n.v., Zwanenburg, model Revolt
Lit.: R. Bullhorst & R. Eggink, *Friso Kramer*, Rotterdam 1991, p. 77; D. de Wit, *40+60 is waarschijnlijk honderd*, Zwolle 1996, pp. 168-169

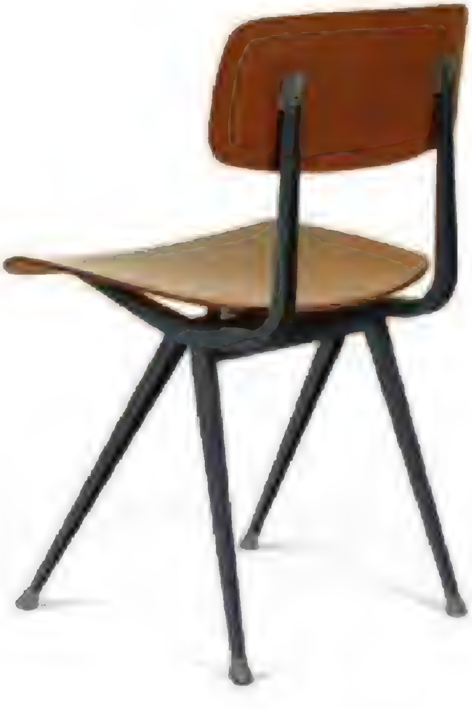
A chair made of folded steel sheeting. The seat and backrest consist of dark blue-grey moulded fibreboard. The components are mutually connected by means of hard-solder joints. In an auditorium, the chairs can be coupled together by sliding the pin under the seat into the connecting piece of the next seat. This chair was also available with armrests. A special hexagonal wagon was developed to facilitate the transport of a stack of these chairs. Friso Kramer was awarded the Signe d'Or for this design at the Triennale di Milano in 1954. Cirkel launched an updated version in 1994.





Friso Kramer, chair (*Result*), design 1958, object between 1970 and 1980s
Inv. no. 20032195
Folded steel sheet; plain birch plywood
45 × 79.5 × 45.5 × 47 cm
De Cirkel n.v., Zwanenburg, model Result (1958 until 1980s)
Lit:, R. Bullhorst & R. Eggink, *Friso Kramer*, Rotterdam 1991, p. 93; D. de Wit, *60+40 is waarschijnlijk honderd*, Zwolle 1996, p. 165; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 304

A table chair made of folded steel sheeting and plywood. The legs are diagonally mounted and spot-welded to the frame, which consists of tapering U-profiles and is two-piece. The sections are mutually connected by an open strip of steel sheeting that allows torque. The seat and backrest are mounted on the frame by means of blind rivets, while the synthetic blocks between these ensure a certain flexibility. The legs and the frame are enamelled in dark grey, and the seat and backrest consist of 7.5-mm clear-varnished birch plywood. The chair was designed for intensive use and great numbers were produced. Originally, the frame was available in eighteen colours.



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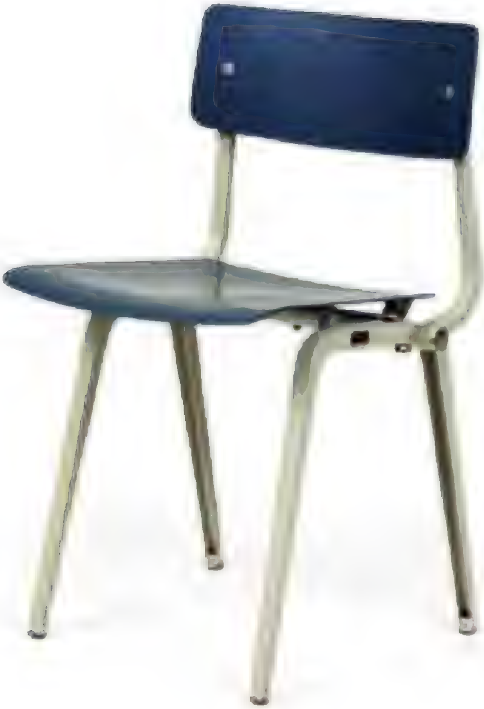
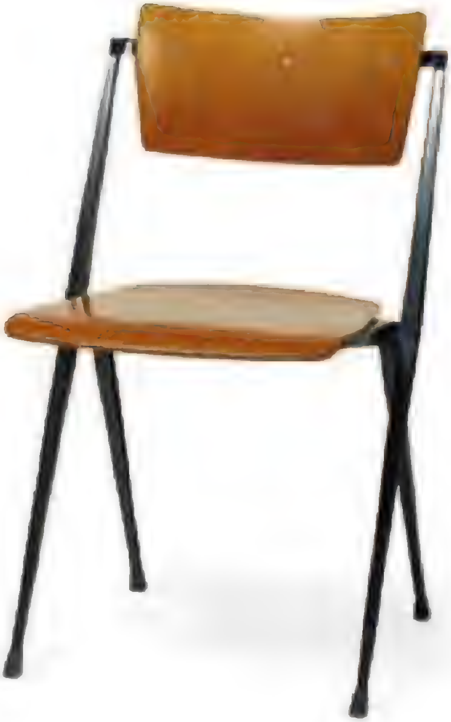
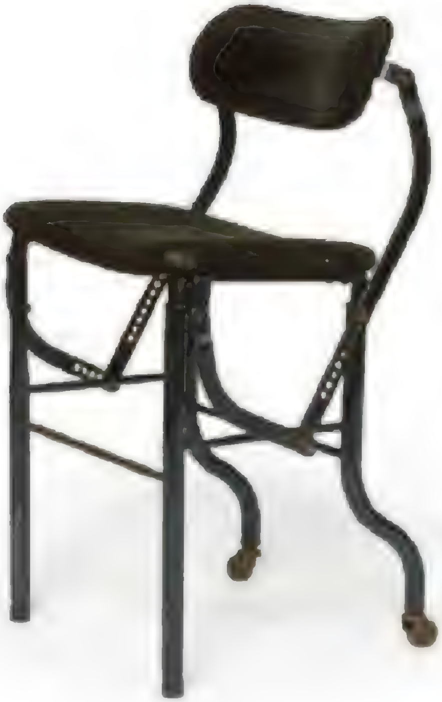


Friso Kramer, folding chair, 1959
Inv. no. 20032151
Grey-enamelled folded steel sheet, fibreboard
48 × 79.5 × 44.5 × 48 cm
De Cirkel, Zwanenburg, Revolt (folding version)
Lit.: R. Bullhorst & R. Eggink, *Friso Kramer*, Rotterdam 1991, p. 94

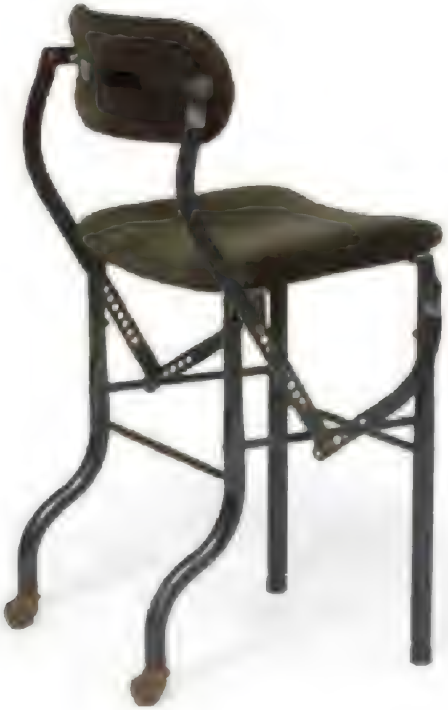


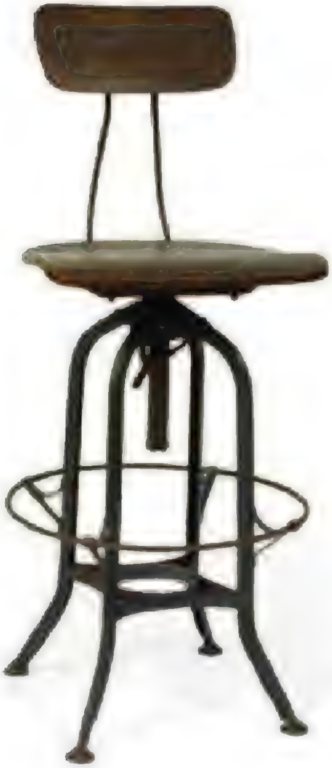
Wim Rietveld, chair (Pyramid), stackable and interlinkable, 1960
Inv. no. 20032180
Folded steel plate, black enamelled; plywood, clear varnished
74 × 80 × 47 × 53.5 cm
De Cirkel, Amsterdam
Lit: P. Vöge, B. Westerveld: *Stoelen. Nederlandse ontwerpen 1945-1985*, Amsterdam 1986, p.110; Ed van Hinte: *Wim Rietveld, industrieel ontwerper*, 010 Uitgevers, Rotterdam 1996, pp.55-58



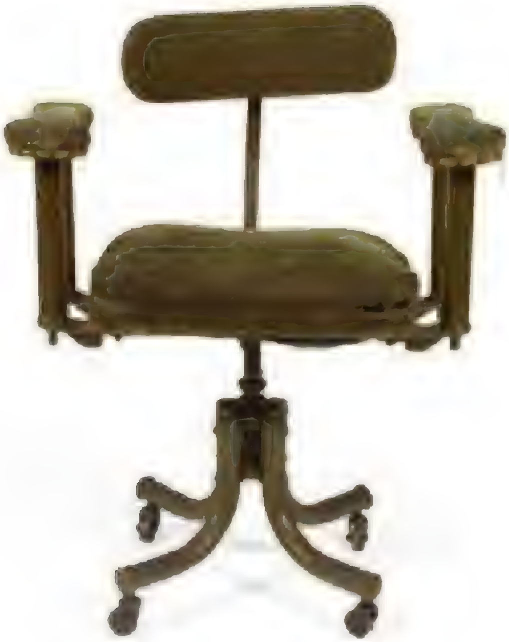
Anonymous, office chair, about 1930
Inv. no. 20032029
Black-lacquered steel tube and strip; metal sheet and corduroy
50.5 × 75.5 × 40.5 × 38 cm; ø 25 mm
Tan-Sad, Great Bridge, Staffs, model 8007
Lit.: *Werkstoelen*, exhib. cat. Stichting Stoelenmuseum, Amsterdam 1996, no. 13; D. de Wit, *60+40 is waarschijnlijk 100*, Zwolle 1996, pp. 64-65

A chair with an adjustable backrest, suitable for a typist. The supporting frame is made of steel tubing and the adjustable backrest is riveted to the tubing. The seat and back surfaces are made of sheet metal covered with smooth fabric. This tubing and strip are black lacquered. This type of office chair was imported as the 'Doe meer stoel' ('Do more chair') from England by the *Weduwe Ahrend* company in the twenties. The Ahrend brochure claimed that the typists could only sit comfortably in a working posture.

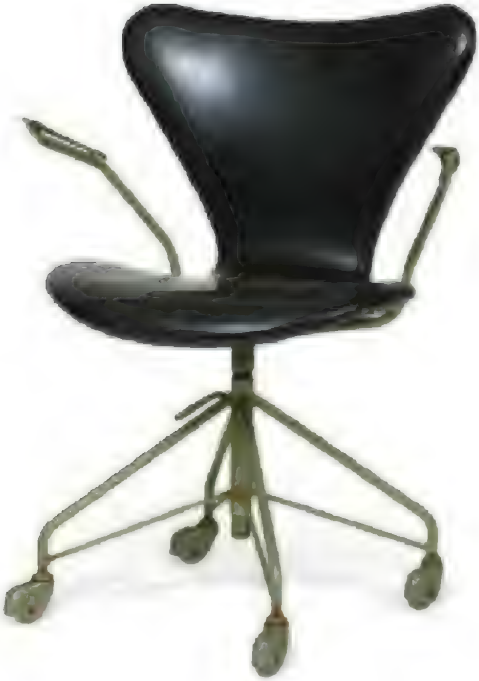




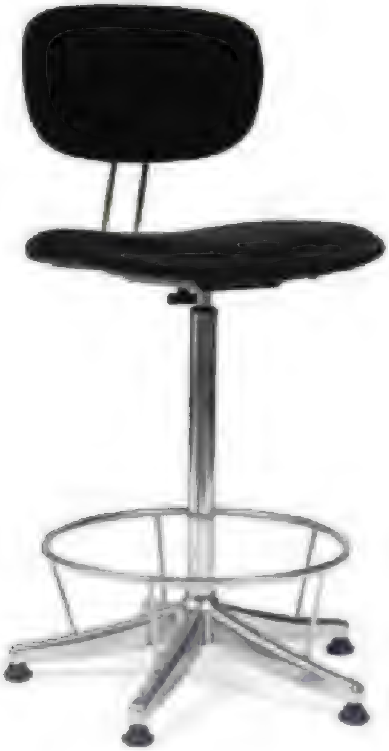
Anonymous, stool, 1920
Inv.no.: 20032047
Steel, folded sheet and rod, black-lacquered; black-lacquered bent plywood
74 × 109.5 × 46.5 × 48.5 cm
Toledo Metal Furniture Company, Stoudsburg (PA.), U.S.A.'Bosses' stool', used in the Van Nelle factory, Rotterdam



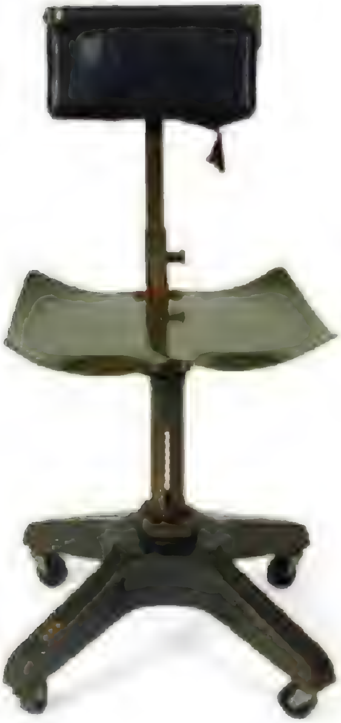
Anonymous, office chair with armrests, 1930s
Inv. no. 20032157
Lacquered tubular steel; corduroy
55.5 × 88.5 × 68.5 × 47.5 cm; ø 33 mm
Tan Sad, Great Bridge, Staffs.
Lit.: *Werkstoelen*, exhib. cat. Stichting Stoelenmuseum, Amsterdam 1996, no. 21



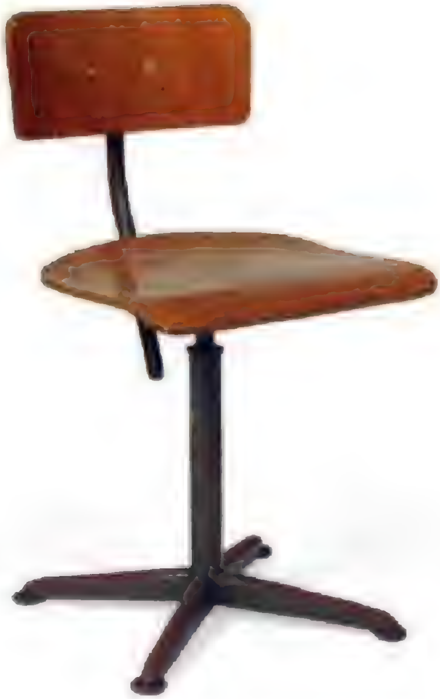
Arne Jacobsen, office chair with arm rests, design 1955, object later
Inv. no. 20032009
Chrome-plated tubular steel; plywood and leatherette
45.5 × 77.5 × 60.5 × 52 cm; ø 14 mm
Fritz Hansen, Copenhagen, Series 7 model 3217



Anonymous, office chair, 1950s
Inv. no. 20032205
Chrome-plated tubular steel; plywood, corduroy
65 × 97 × 46 × 56 cm; ø 40 mm
Unknown, possibly Gispen, Culemborg



Anonymous, office chair, 1930s
Inv. no. 20032053
Green-enamelled steel sheet and tube, cushion
52.5 × 91.5 × 60 × 60 cm
Burroughs Adding Machine Company, Detroit
Lit.: *Werkstoelen*, exhib. cat. Stichting Stoelenmuseum, Amsterdam 1996, no. 26

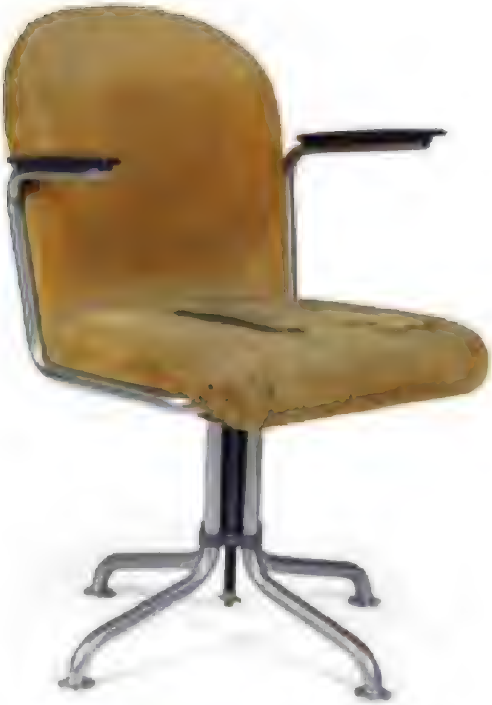


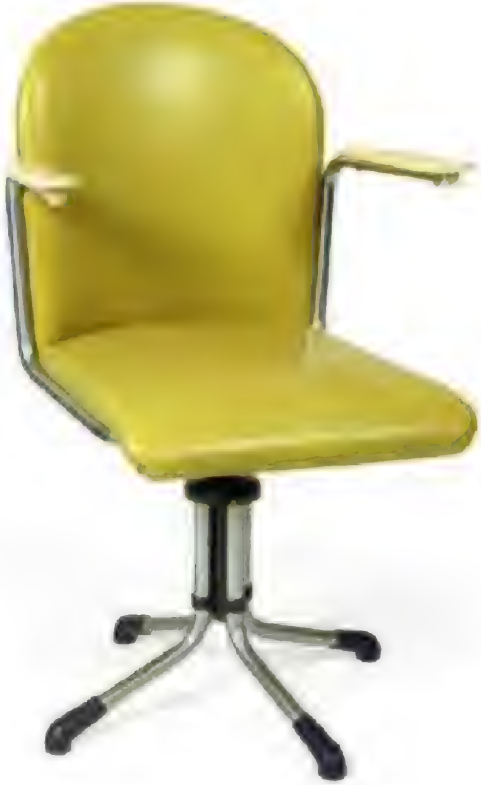
Anonymous, office chair, 1950s
Inv. no. 20032085
Lacquered moulded steel sheeting and rod; wood
48.5 × 76.5 × 39 × 41.5 cm
Unknown, possibly De Cirkel

Willem Hendrik Gispen, office chair, design 1937, object 1937-1965
Inv. nr. 20032192

Chrome-plated tubular steel; velour, bakelite
49 × 86.5 × 59 × 64 cm; ø 26 mm
Gispen n.v. Culemborg, model 356 (1937-1965)
Lit.: M. Mual, *Gispen buismeubelen en verlichting 1920–1940*, Nijmegen 1990, p. 18; A. Koch, *W.H. Gispen. Serieproducten 1923–1960*, Rotterdam 2005, p. 127

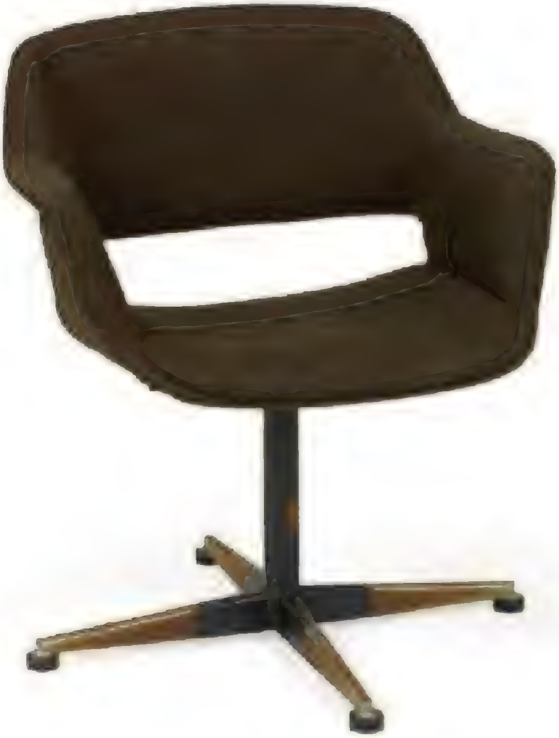
A swivel chair, adjustable in height, with armrests. The four tubular steel legs are mounted on an enamelled steel plate. The seat and armrests are connected to the central column by means of steel lips and bolts. The seat is made of plywood with smooth upholstery and covered with grey velvet. In the fifties, it was available in imitation leather (see chair below). This office chair was in production until 1966.



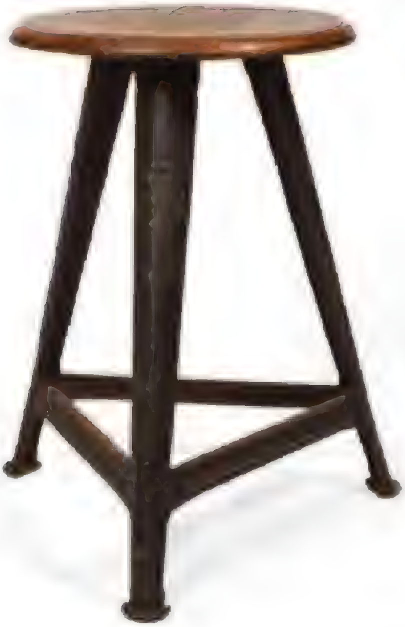


Willem Hendrik Gispen, office chair, design 1937, object 1950s
Inv. nr. 20032078

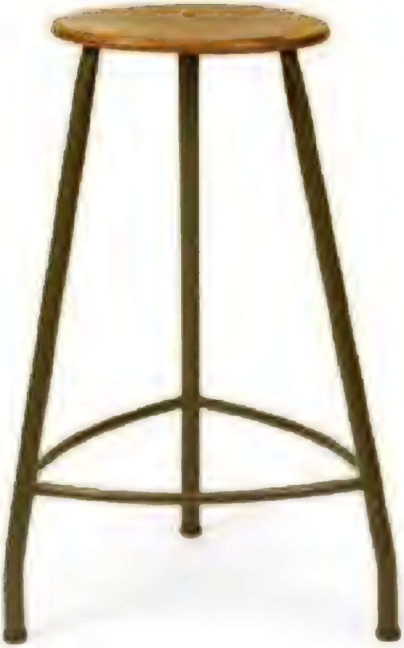
Chrome-plated tubular steel; leatherette, plastic
52 × 93 × 61 × 55 cm; ø 22 mm
Gispen n.v. Culemborg, model 356 (1937-1965)
Lit.: M. Mual, *Gispen buismeubelen en verlichting 1920–1940*, Nijmegen 1990, p. 18; A. Koch, *W.H. Gispen. Serieproducten 1923–1960*, Rotterdam 2005, p. 127
See also chair above.



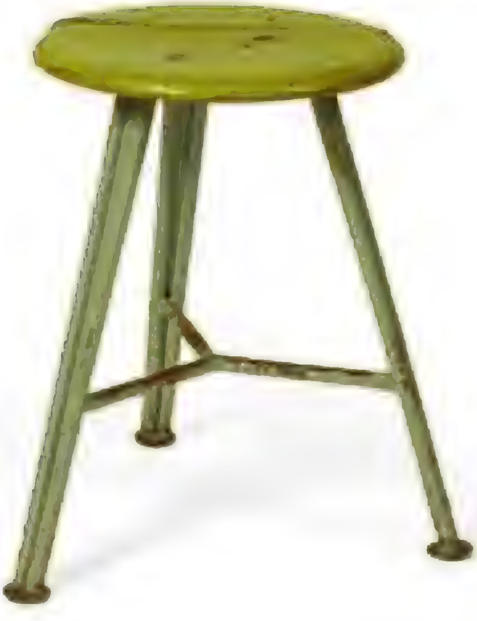
Anonymous, office chair with armrests, 1960s
Inv. no. 20032191
Chrome-plated steel; plywood and fabric
41 × 73 × 63.5 × 56.5 cm
Asko Finnternational, Finland, or Fröscher, Germany
Lit.: *Eigen Huis & Interieur*, May 1996; *Eigen Huis & Interieur*, March 2006, p. 66



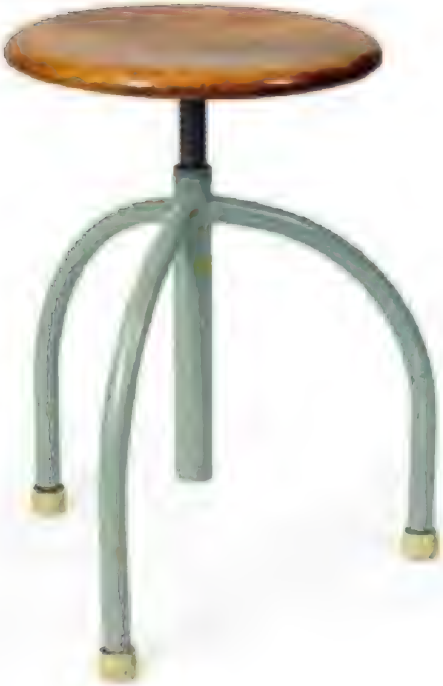
Anonymous, stool, 1920s
Inv. no. 20032033
Black-lacquered folded steel sheet; wood
54 × 54 × 46 × 43 cm
Rowac, Chemnitz



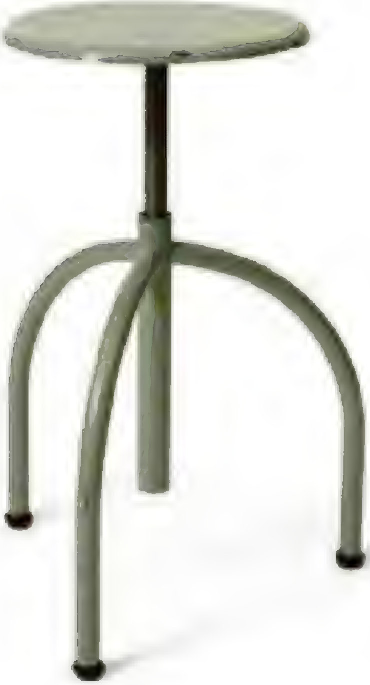
Anonymous, stool, 1930s (?)
Inv. no. 20032066
Enamelled tubular steel; clear-varnished plywood
74 × 74 × 47 × 45 cm; ø 26 mm
Unknown



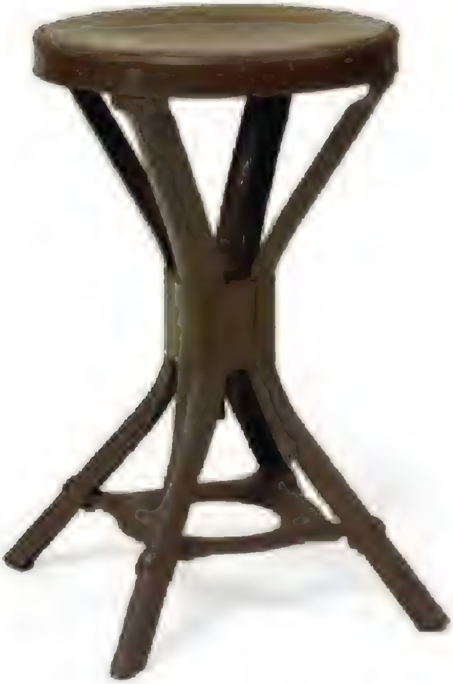
Anonymous, stool, 1920s
Inv. no. 20032071
Enamelled tubular steel; steel sheet
48 × 48 × 44.5 × 42 cm; ø 17 mm
Unknown



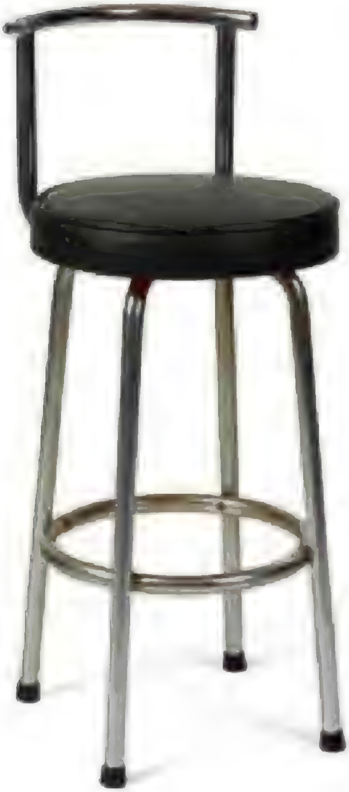
Anonymous, stool, 1950s
Inv. no. 20032073
Grey-lacquered tubular steel; beechwood
52 × 52 × 42.5 × 41 cm
Oostwoud, Franeker



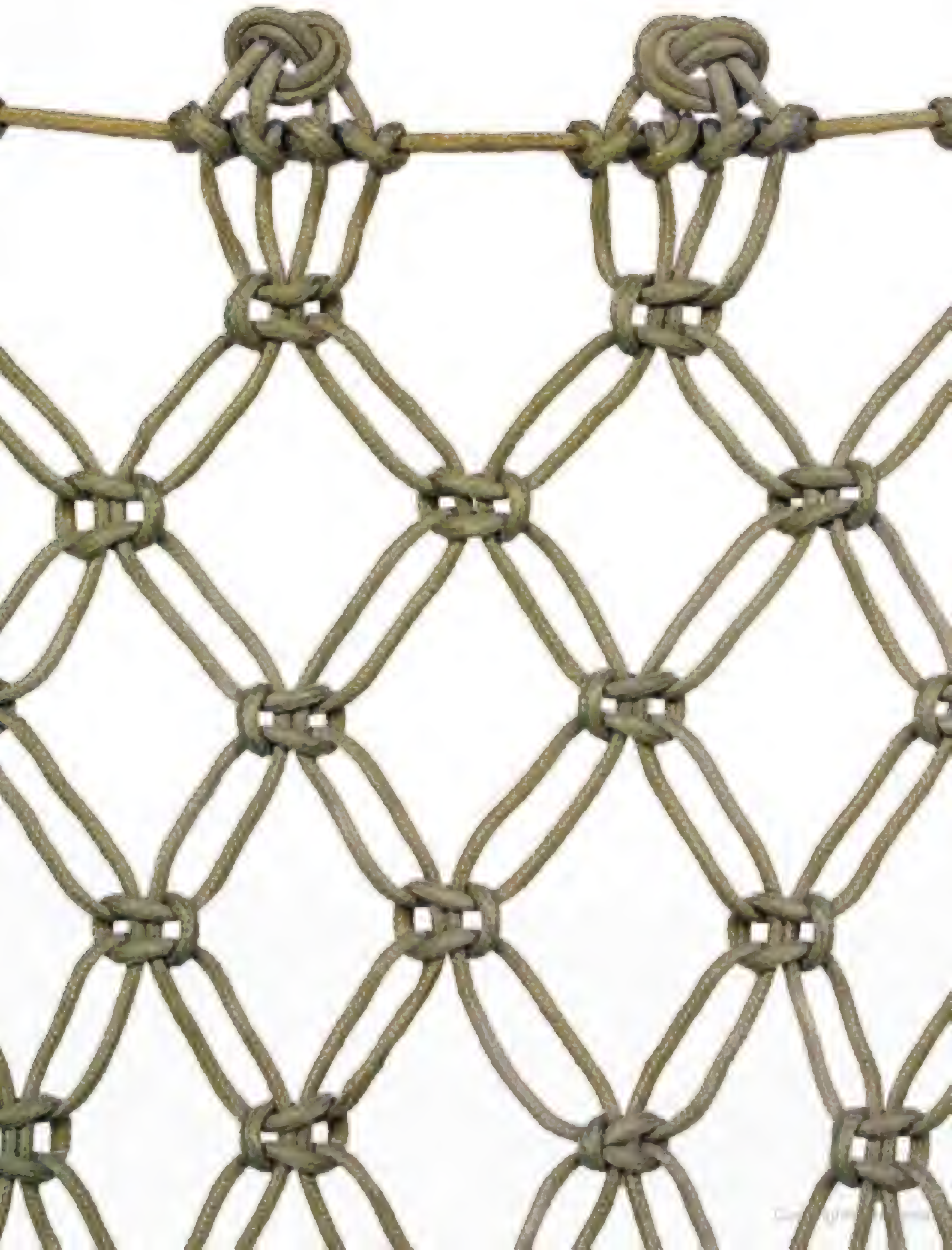
Anonymous, stool, 1930s or later
Inv. no. 20032004
Enamelled tubular steel; steel sheet
62.5 × 37.5 × 37.5 × 62.5
Oostwoud, Franeker



Anonymous, stool, 1940s
Inv. no. 20032067
Lacquered steel sheet; wood
30 × 30 × 31 × 31 cm
Evertaut, Blackburn
Lit.: *Werkstoelen*, exhib. cat. Stichting
Stoelenmuseum, Amsterdam 1996, no. 6



Anonymous, stool with back, 1950s
Inv. no. 20032061
Chrome-plated tubular steel; plywood and
leatherette
62 × 81 × 34 × 38.5 cm ø 24 mm
Fana Metaal, Rotterdam, for the Bijenkorf



Synthetic material

The general impression is that objects and furniture made of synthetic material flooded the world from the 1950s onward. In fact, semi-synthetic materials have been in use since the 19th century. The first material in common use was vulcanized rubber, a mixture consisting of natural rubber to which sulphur has been added to harden it. This process was discovered in the UK in 1844, after which the material was used in countless objects, varying from car tyres to jewellery. The production and processing of these first semi-synthetic substances took place in the same way as that involving natural plastic substances such as horn, for example. They were moulded into shape at a high temperature and then further processed.

From the 1850s onward, manufacturers in Great Britain worked on a plastic substance extracted from cotton cellulose. In 1869, the American John Wesley Hyatt refined the formula by adding camphor, thus creating *Celluloid*. This material was easily processed and enabled extremely refined finishing in mass production. It was soon taken into production all over the world. The specialized machines that Hyatt developed to cut, cast, mould, and press the material have had a major influence on the production of modern plastics.

Celluloid was used as a cheap replacement for exclusive materials such as ivory, tortoiseshell and amber, so that luxury items also became available to the growing middle classes. In terms of price, celluloid nestled between that of the original materials and the production of cardboard, tin, bone and vulcanized rubber. Nevertheless, the fact that Celluloid was always applied as a replacement for a more expensive substance laid the basis for the image of synthetic material as a cheap imitation material.

The next step in the development of synthetic material was set by Leo Baekeland, who produced the first completely synthetic material in 1907. Initially, Bakelite was only available in brown and black, but after the patent expired in 1927, it was produced in many different colours. The late twenties witnessed the introduction of other new kinds of plastic, and increased competition brought about a fall in prices. In the late twenties and early thirties, synthetic materials were applied on a large scale in consumer goods.

When the economic recession evolved to become the Great Depression of the thirties, business people in the USA attempted to stimulate production by making their products more visually attractive. The profession of industrial designer then developed shoulder to shoulder with the plastics industry. Shiny plastic casings with streamlined machine-age design could be easily and cheaply realized by means of plastic casts in moulds.

During WW2, major steps were secretly set by both the Germans and the Allies in the production of plastics for military use. Between 1939 and 1944, the production of plastics in the UK doubled, in Germany it increased from 100,000 tons to 250,000 tons, and in the USA it increased from 106,000 to 410,000 tons. Besides high-quality military use, however, the majority of this production was oriented to generating alternatives for items made of traditional materials, which had become scarce. In those years, consumers had to make do with lower-quality synthetic products that were often poorly produced and not well-geared to their function. The consequence of this was that the image of synthetic materials declined rapidly. After the war, many consumers opted to wait for the return of traditional products, instead of accepting plastic imitations. To recapture the hearts of the consumers, the manufacturers had to improve the image of plastic articles.

In the 1950s and 1960s, designers aimed at generating a distinctive appearance for synthetic materials, one that would do full justice to the materials themselves. In the USA, Eero Saarinen and Charles and Ray Eames designed the first plastic furniture. They appreciated the malleability of plastic, which made it possible to create sculptural, flowing forms with shiny surfaces. In 1948, the Knoll Company introduced Saarinen's *Womb Chair*, a polyester easy chair coated with foam plastic, with a foot-rest. In that same year, Charles and Ray Eames developed *La Chaise*, a reclining chair made of two layers of fibreglass around a foam rubber core. After this prototype, the couple developed a series of chairs with seats of polyester reinforced with fibreglass, and these were put into production by Herman Miller. The manufacture of these chairs was labour-intensive and therefore not cheap, which had been the original intention. They were particularly popular for furnishing waiting areas in hospitals and suchlike. The seats of these first models rest upon metal legs, which was a solution that eventually did not appeal to Saarinen. In 1957 he produced the *Tulip Chair*, a chair that looked as if it had been made completely of plastic. In reality, the slender foot was made of aluminium, coated with plastic – the situation had finally been achieved in which a material was applied to look like plastic, instead of the other way around.

After this auspicious start, however, the design aspects of the plastics industry in the USA tended to stagnate. In the 1960s and 1970s, synthetic materials were mainly used to imitate wood in comprehensively ornamented designs.[1] During the 1960s, Italian plastics enjoyed a leading position in the world of synthetic materials. The development of the plastics industry in Italy, which deviated a little from the rest of the world, probably explains why.

[1] C.J. Waechter, 'An International Survey of Plastics in Furniture', in: *Society of Plastics Engineers*. Plastics in Furniture, National Technical Conference, St. Louis, Missouri, 1970, p.1.

After manufacturers in Italy began to produce Celluloid in 1924, the industry expanded rapidly. But an abrupt change occurred in 1935 and 1936 when the government began to restrict imports in the pursuit of Italian autarky. This resulted in a lack of raw materials for the production of synthetic materials as well as isolation from technological and scientific innovation beyond the Italian borders. Industry was forced to perform research into the use of alternative raw materials and processes. It was against this background that Giulio Natta, in close co-operation with industry, initiated a study that would end with the 1963 Nobel Prize for Chemistry, for the invention of polypropylene.

Although Italian synthetics industry had stagnated during the war, it was able to redevelop at a rapid rate afterwards. The plastic factories had remained largely intact, many developments from abroad could be adopted after the war, and consumers in Italy had not built up a prejudice against plastic products, as had occurred elsewhere. In addition, traditional materials were still scarce. Between 1950 and 1960, domestic consumption of plastics increased by 825 %, export by 4850 %, and import by 900 %. Although the majority of products were not particularly outstanding in terms of quality, a number of exceptions soon appeared. Long-term co-operation with recognized designers arose from the early fifties onward, and this led to great successes.

The Kartell company, for example, was founded by Giulio Castelli in 1949 for the production of car accessories. In the early fifties, Castelli also began to import synthetic user goods from the UK, which could be sold in Italy for high prices due to shortages and unfamiliarity. Capitalizing on this opportunity, Kartell began to produce plastic articles in 1953, in conjunction with the designer Gino Colombini. This co-operation lasted until 1962. Colombini's position as a member of the project team enabled close co-operation with the engineers who were responsible for the implementation of the designs, which turned out to be a very successful approach. Kartell expanded in the course of the fifties and set up new departments in which new designers were appointed. The highlight of Kartell's activity was marked by the design for the *K4999** by Marco Zanuso and Richard Sapper in 1964. This design had become possible due to the development of new, stronger polymers that could be shaped by means of injection moulding. The *K4999*, made of polyethylene, was the first chair to be made completely of plastic.

Inv. no. 20032042
p. 106

Industry and design continued to influence and stimulate one another. During his career Joe Colombo was employed by various producers, working with synthetic materials that were representative of the developments within the industry at that time. From 1965 to 1967 he worked on the *Universale* table chair at Kartell. Originally he had wanted to make this chair in aluminium, but after the appearance of the *K4999*, he opted for polyethylene. Other producers of synthetic materials also adopted the strategy of working closely with designers. In 1968, Vico Magistretti developed the *Selene* chair at Artemide, not by drawing it but in consultation with the mould-maker.* With their flowing forms, shiny surfaces and bright colours, many designs from that period display the best aspects of synthetic materials.*

Inv. no. 20032032
p. 108

With the advent of Pop culture in the early sixties and the anti-design movement, the aims of the designers began to change. The dogmas of the Modern Movement were discarded and new aesthetics of flexibility and transience arose. With this, the quest for authentic design was abandoned in Italy in the course of the sixties, and replaced by liberal experiments with the new materials. Full use was made of the properties of plastics, such as its malleability, or actually its intrinsic formlessness, its flexibility, softness, temporariness, and disposability.*

Inv. no. 20032077
p. 113

In 1967, Scolari, De Pas, D'Urbino and Lomazzi presented the inflatable *PVC Chair*, produced by Zanotta SpA. This model was immediately copied in the UK and France. Polyurethane was also a material that first became popular among a series of designers in Italy in the late sixties. They designed seating units that could be used in various ways in accordance with the ideals of Pop Art, or emulated the form of something else, or were simply formless (the bean-bag). From 1967 onward, Colombo designed various flexible items of furniture consisting of polyurethane components that could be coupled and further manipulated.

Inv. no. 20032168
p. 112

Besides Italy, Denmark was also very prominent in furniture design. Within the Scandinavian interpretation of modern design, a major role was claimed by soft, organic forms and natural materials. Of course, this did not harmonize with the application of synthetic material, and most Danish chairs were designed in wood. But in 1957, Arne Jacobsen made use of the great freedom of formed offered by synthetic material to create the extremely sculptural *Egg Chair.** Verner Panton continued this development with his *Panton Chair*, which he designed in the period 1957-1960. Both designs enjoyed great success and are still in production.

Synthetic material remained popular among designers until the mid-seventies. The energy crisis suddenly made the basic materials too expensive, however, while the consumer began to become aware of environmental objections. Designers then turned back to wood as the basic material for furniture, a move

Inv. no. 20032031
p. 97

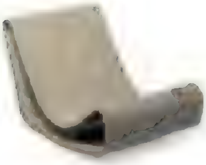
that was facilitated by new lamination techniques that allowed much freedom of form. Nevertheless, synthetic material continued to be used in various applications, albeit on a reduced scale.

In the eighties, under the influence of Post-modernism, designers began to become interested in the communicative possibilities of furniture surfaces. Independent of the material used under the surface, the designer could determine the appearance of his object by means of a layer of printed plastic laminate on the exterior. The majority of furniture produced for mass consumption was now made by finishing wooden fibreboard with a layer of laminate, with a woodprint if required. Unfortunately, this represented a retreat toward synthetic material as a cheap, inferior imitation.

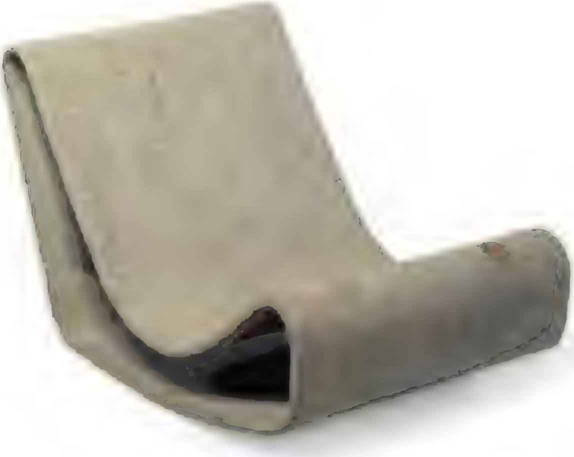
Although striking innovation in synthetic furniture has become scarce since the 1980s, the example of polyester reinforced with fibreglass led to interesting new applications in the nineties. Marcel Wanders created a chair by processing (carbon) fibres into rope, then knotting the chair in the required form and fixing it with epoxy resin.*

Finally, one last chair must be mentioned. This has been included in the Synthetic Materials category through lack of a better alternative. It is the garden chair made of fibre cement, designed by Willy Guhl in 1954.* The unique feature of this chair is that it was moulded from a wet plate of fibre cement, in contrast to other furniture made of cement, such as the park bench with concrete legs, so common in the Netherlands, or garden furniture made of terrazzo, which is cast in a mould.

Inv. no. 20032253
p. 117



Inv. no. 20070004
p. 96

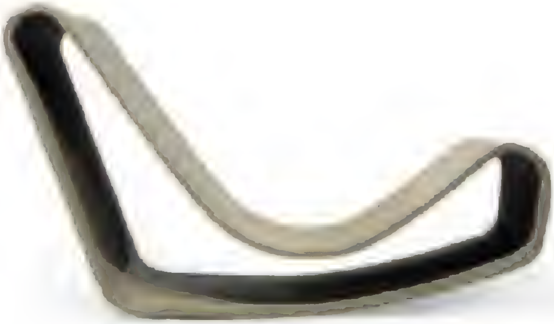


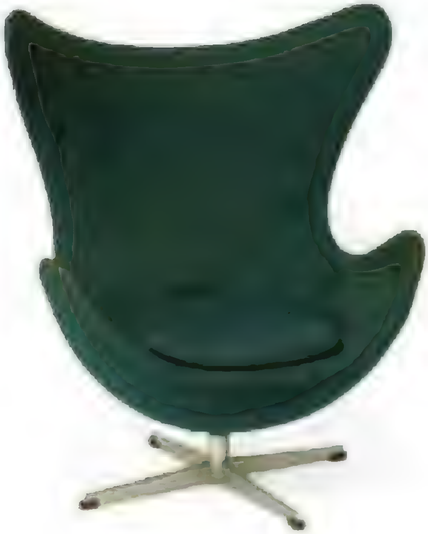
Willy Guhl, garden chair (*Gartensessel*), 1954
Inv. no. 20070004
Fibre cement
27.5 × 52 × 55 × 89.5 cm
Eternit, Niederuren, 1954–1980
Lit.: A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 122, 123; A. Rüegg (ed.), *Schweizer Möbel und Interieurs im 20 Jahrhundert*, Basle/Boston/Berlin 2002, pp. 172, 173, 368; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 175
Donation from Vincent van Hezik, Rotterdam, 2006.

This low garden chair is moulded from a fibre cement plate. When this plate has just been pressed and is still damp, it can be moulded into shape. After drying, it is strong enough to be used as a chair without any auxiliary support.

This was an innovative application of fibre cement, a material that had been mainly used in house-building before this time. Because the whole plate of standard-size fibre cement is used, there is very little material wastage, while the chair is extremely easy to produce. The material is completely insensitive to the influence of weather and is thus extremely suitable as an item of garden furniture. In 1955, Guhl was awarded the *Die Gute Form* prize for this design. Guhl also designed flower boxes and a standing ashtray for Eternit, a producer of fibre cement.

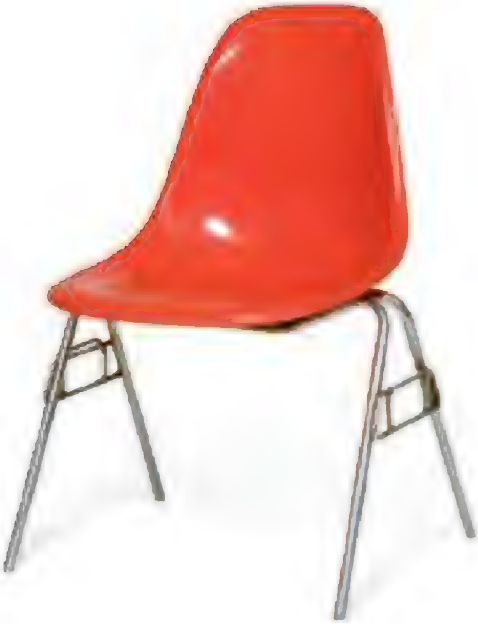
Eternit made abundant use of asbestos as a fibre in its cement. In the 1970s, it became clear, however, that asbestos fibres can cause cancer if inhaled, a fact that tended not to enhance the desirability of the chair.





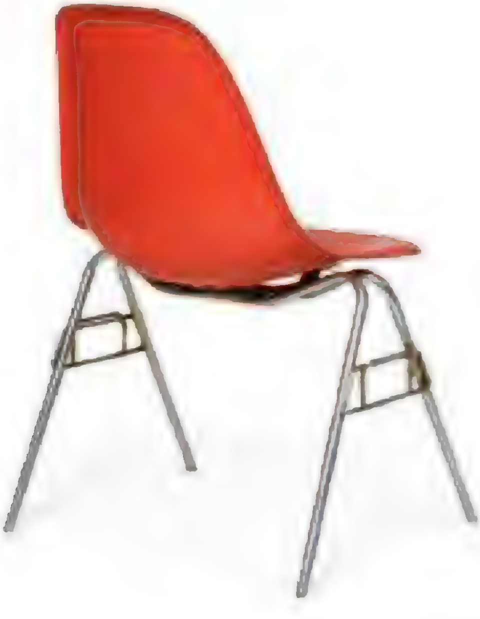
Arne Jacobsen, easy chair (*Egg Chair*), 1958
Inv. no. 20032031
Aluminium; glass fibre reinforced polyester, foam rubber, textile
39 × 106 × 88 × 80 cm
Fritz Hansen, Allerød, model number 3316, 1958 until the present
Lit.: C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 346; D. Raizman, *History of Modern Design*, London 2003, pp. 261, 262; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 186
Donation from ir. A. Haak

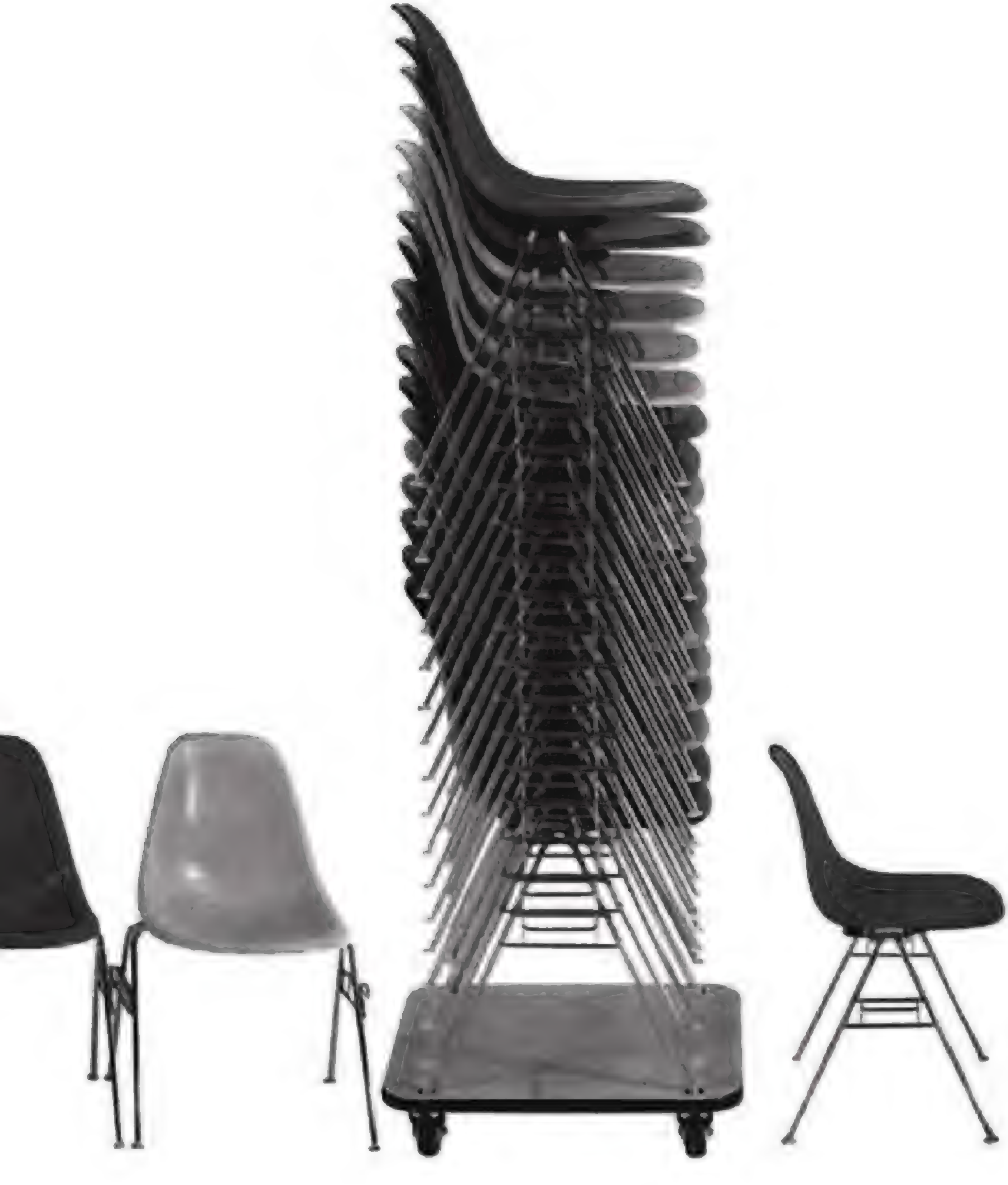
This easy chair, with the name *Egg Chair* is a tub chair with armrests and a high back. The seat is a polyester shell reinforced with fibreglass, and it is upholstered with foam rubber and a turquoise smooth woollen fabric with a separate seat cushion. The seat is mounted on a cast aluminium swivel foot that rests on rubber studs.
Along with its corresponding foot-rest, the *Egg Chair* was designed for the S.A.S. Royal Hotel in Copenhagen. Jacobsen was also the architect of the hotel itself, and designed the entire layout. This chair was extremely successful and is still in production.



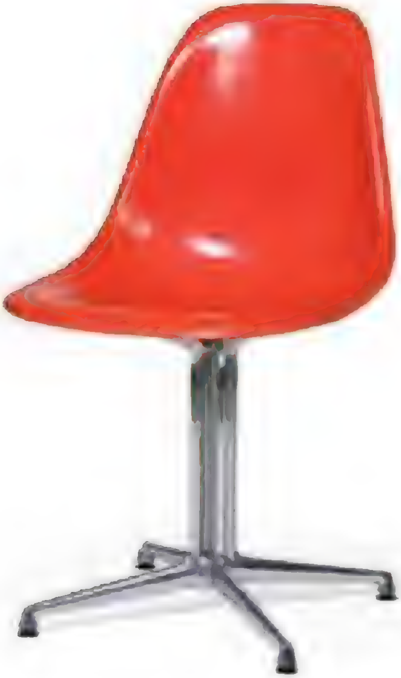
Charles & Ray Eames, chair, 1954
Inv. nos. 20032015, 20070020, 20032141
Steel tube; fibreglass-reinforced polyester
42 × 79 × 56.5 × 52 cm; ø 16mm
Herman Miller, Zeeland (Michigan), DSS linking chair
Lit.: *Architectural Design*, September 1966, p. 455; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 159

A stackable chair with worktop, intended for classrooms and lecture halls. The frame consists of bent and welded thin tubular steel. The transverse strips between the legs make it possible to link several chairs together. The polyester seat hollow is reinforced with glass fibre. The seats are black or orange-red.



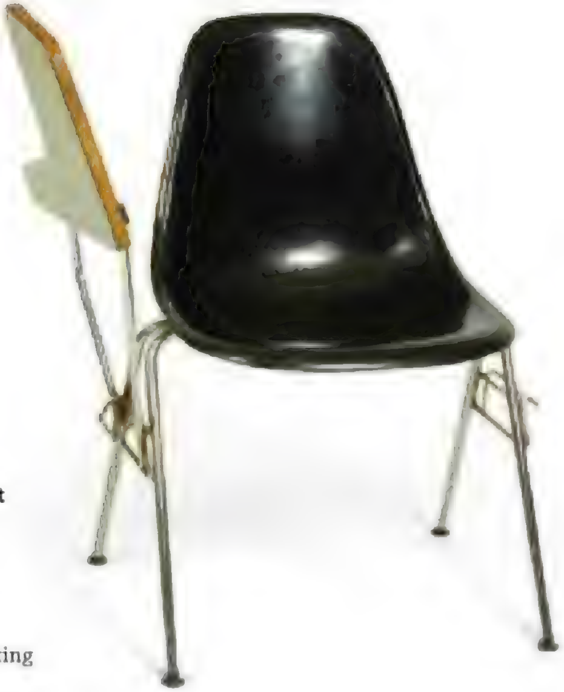


Herman Miller, The 1960s.
Source: Architectural Design, September 1966, p. 455.



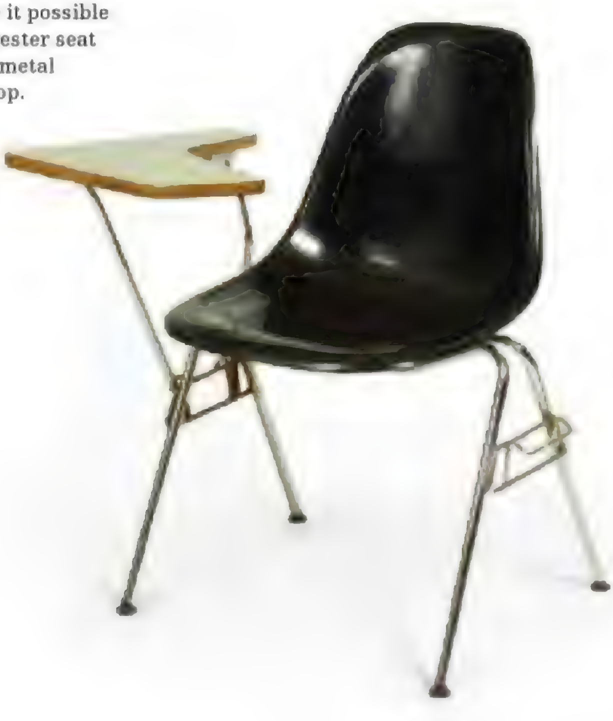
Charles & Ray Eames, chair, 1961
Inv. no. 20032017
Cast aluminium; glass fibre reinforced polyester
45.5 × 81.5 × 46.5 × 52 cm; ø 14mm
Herman Miller, Zeeland (Michigan)
Lit.: *Architectural Design*, September 1966, p. 439, 455; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 388

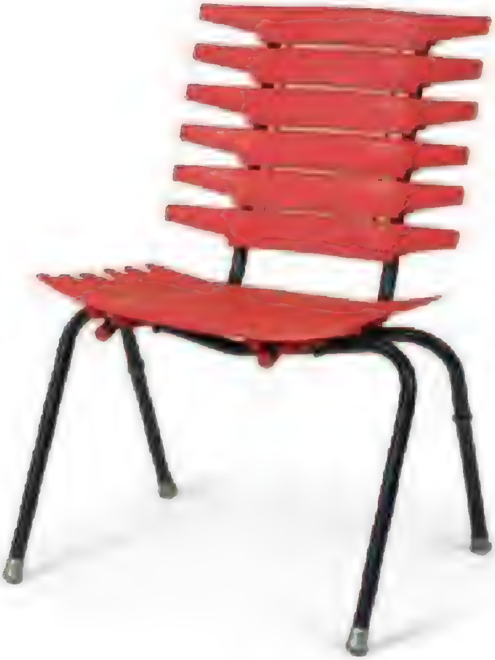
Tub chair on a swivel leg. The polyester seat hollow is reinforced with glass fibre and is orange-red. The tub is the same as that in the above-mentioned DSS chairs, combined with the leg that was applied in the La Fonda del Sol restaurant in New York in combination with a different tub.



Charles & Ray Eames, chair, design 1954, object 1970s
Inv. no. 20032133
Chromed steel tube; glass fibre reinforced polyester, multiplex
45 × 80.5 × 68 × 63.5 cm; ø 16 mm
Herman Miller, Zeeland (Michigan), DSS linking chair with table
Lit.: *Architectural Design*, September 1966, p. 437; E. Demetrios, *An Eames Primer*, London 2001

A stackable chair with worktop, intended for classrooms and lecture halls. The frame consists of bent and welded thin tubular steel. The transverse strips between the legs make it possible to link several chairs together. The polyester seat hollow is reinforced with glass fibre. A metal bracket on the side supports the worktop.



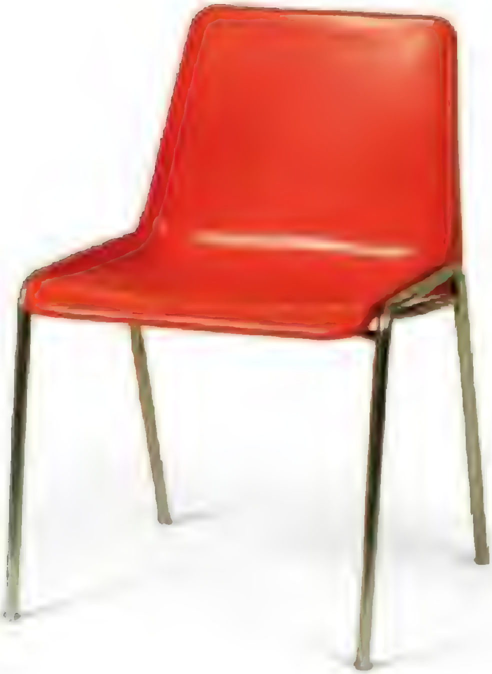


Kho Liang Ie, *Garden Chair*, 1960
Inv. no. 20032020; version with armrests
inv. no. 20070018
Steel tube, black enamelled; plastic
42.5 × 80 × 57 × 58 cm; ø 22 mm
CAR, Katwijk
Lit.: I. van Ginneke, *Kho Liang Ie*, Rotterdam 1986, pp. 49, 92; P. Vöge & B. Westerveld, *Stoelen; Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, pp. 52, 110

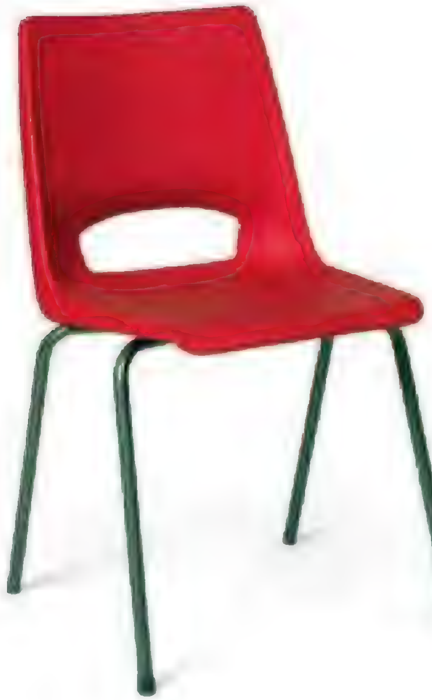
This garden chair has a frame of curved and welded, black-lacquered steel tubing. The seat and backrest are made of self-supporting, orange-red synthetic strips that are attached to the frame by means of clamps of the same material. These synthetic strips are all identical and have been manufactured using the injection moulding technique. The legs end in rubber studs. The frame of the model with armrests is lacquered grey, the strips are identical. The orange-red synthetic caps on the armrests are blind-riveted to the tubular metal supports.

CAR was a company that was primarily engaged in producing practical and budget-oriented furniture. The firm manufactured tubular constructions for canteen chairs and tables, terrace furniture, office furniture, and hall chairs. Almost all the furniture that Kho Liang Ie designed for the CAR company was quite simple, and the accent lay on its suitability for industrial production and modular construction. The designs for models *305/315* and *309* were reasonably successful. A variation in seats and backrests, in either wood or synthetic material and upholstered if required, could be mounted on the subframes. In the *309* series, the subframe had two steel tubular extremities to which a plastic seat could easily be attached. The plastic components were ordered in the Far East and assembled in the factory in Katwijk. (see inv. nos. 20070009, 20070014).

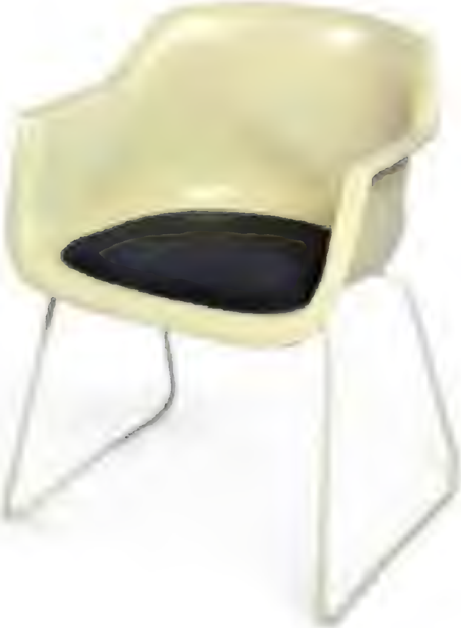
In the more adventurous design for the strip chairs, technology could not cope with the designer's ideas. In terms of form, this chair was far ahead of its time: the red plastic strips gave the chair an extremely futuristic appearance. Unfortunately, it turned out that the design was also far ahead of developments in the synthetics industry. Under the influence of sunlight, the material rapidly declined in quality, becoming fragile and brittle. The attachment of the strips by means of synthetic caps also proved to be impractical and vulnerable. After a few months, the decision was taken to halt production. If the chair had been developed a few years later, these problems would probably not have arisen and the chair would undoubtedly have become a classic.



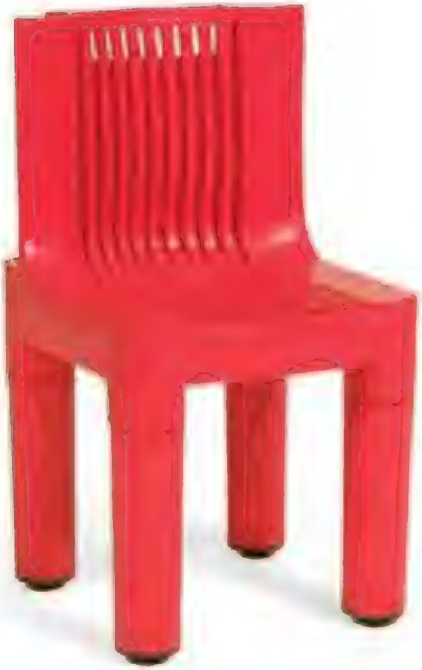
Theo Tempelman, chair, 1967
Inv. no. 20032052
Steel tube; plastic
46 × 81 × 53.5 × 52 cm; ø 20 mm
A. Polak's Meubelindustrie, Hilversum, model AP 40
Lit.: P. Vöge & B. Westerveld, *Stoelen, Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, pp. 51, 122; L. Dosi Delfini (ed.), *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 361



Phillippus + Potter, chair, 1967
Inv. no. 20032049, 20032165
Steel tube; polyethylene
46.5 × 84 × 44 × 49.5 cm; ø 19 mm
Ahrend Groep b.v., Amsterdam, model
PP 504090



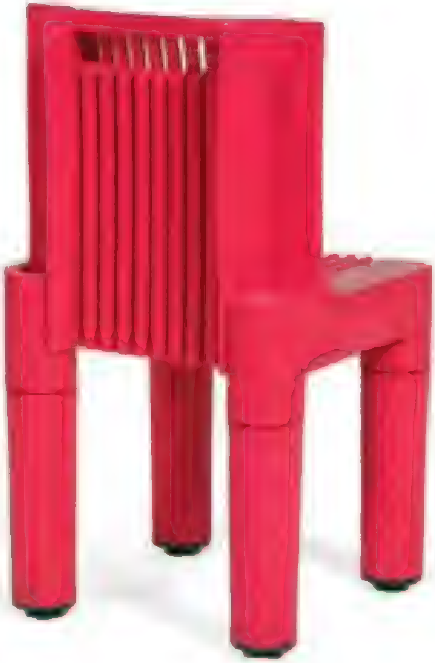
Unknown, chair, unknown
Inv. no. 20070015
Steel rod; plastic
47.5 × 77 × 57.5 × 52 cm; ø 14 mm
CAR, Katwijk
Donation from Christian J. Meijer 2007.

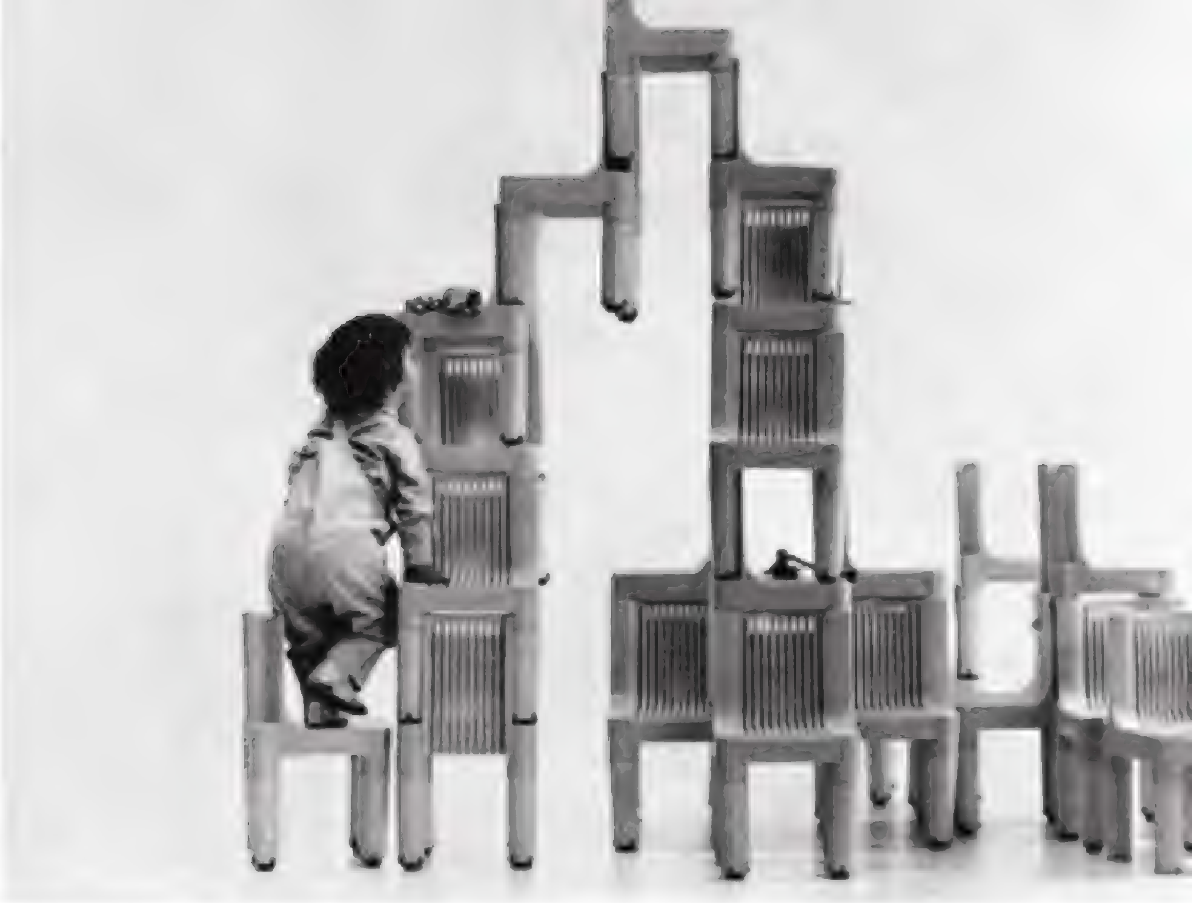


Richard Sapper & Marco Zanuso, children's chair, 1964
Inv. no. 20032042
Polyethylene
28 × 49.5 × 27 × 27.5 cm
Kartell, Noviglio, model number K4999
Lit.: *Domus*, no. 455 (October 1967), p. d/403; G. Bosoni, 'La via italiana alle materie plastiche', in: *Rassegna*, June 1983, no. 14/2, p. 53; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 422; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 328

A stackable children's chair made of synthetic material. The chair consists of a ribbed seat and separate legs, both of which are made of injection-moulded polyethylene. The legs are inserted into tubes under the seat. There are rubber studs at the extremities of the legs.

The first chair that was made during the pioneering years of plastic design in Italy was the children's chair created by Richard Sapper and Marco Zanuso. The chair was intended to be manufactured in large quantities for primary schools in Milan, so that the costs and ergonometric criteria were rather strict. The original plan was to make the chair from laminated wood, but the high production costs and the weight, which made the chairs difficult to handle for children, induced the creators to seek for a new material. The first realized prototype was made of painted steel plate. Although this chair was easy to manufacture in production-technical terms, and was also easy to stack and relatively cheap, the material again turned out to be not sufficiently child-friendly: the steel had sharp edges and it was still too heavy for children to handle easily. Moreover, stacking the chairs soon damaged the paint layer. After two years, Zanuso and Sapper could start all over again. However, technological developments in synthetics had advanced significantly in the intervening years,





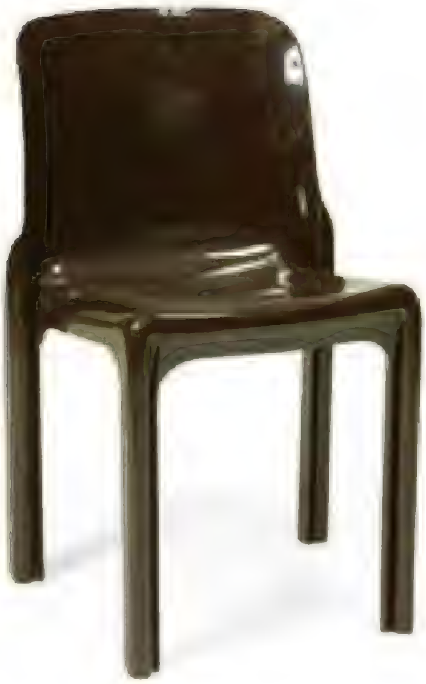
Source: G. Dorfles, *Marco Zanuso, designer*, Editalia, Rome 1971, p. 39

while the price of polyethylene had decreased considerably due to the expiry of the international patents in 1960, so that plastic became a feasible alternative.

The children's chair was finally designed on the basis of a number of criteria that were inherent to the material. First of all, the supporting frame had to have the same overall diameter for production-technical reasons. This diameter had to be reasonably massive due to the fact that polyethylene is rather soft. This had consequences for the stackability of the chair. With the dimensions that were necessary for the legs, it would be almost impossible to create space in a seat to accommodate the legs of the chair that would be stacked on top. The decision was taken to turn the stacking problem into a game. The legs of the chair could be placed in the recesses in the backrest of another chair, so that a composition could be made of chairs coupled together. The separate legs were a concomitant playful element. The separate production also had a technical reason: at that time, it was not yet possible to cast the chair as a single unit.

Transporting the components separately was also more economic. The characteristic ribs that extend across the seat and back served as ventilation channels. The degree to which the ultimate form of the chair was oriented to the material of which it was made became apparent when people attempted to create a wooden prototype. This turned out to be particularly difficult: the complex double-curved shape was almost impossible to realize in wood.

Regardless of all kinds of impediments in technical, economic and ergonomic areas, Zanuso and Sapper finally managed to design a chair that not only satisfied all chair-related criteria but also even managed to fire the imagination. It was a chair with which children could play without hurting themselves, it was an optimally economic and constructive solution without any loss of aesthetics.

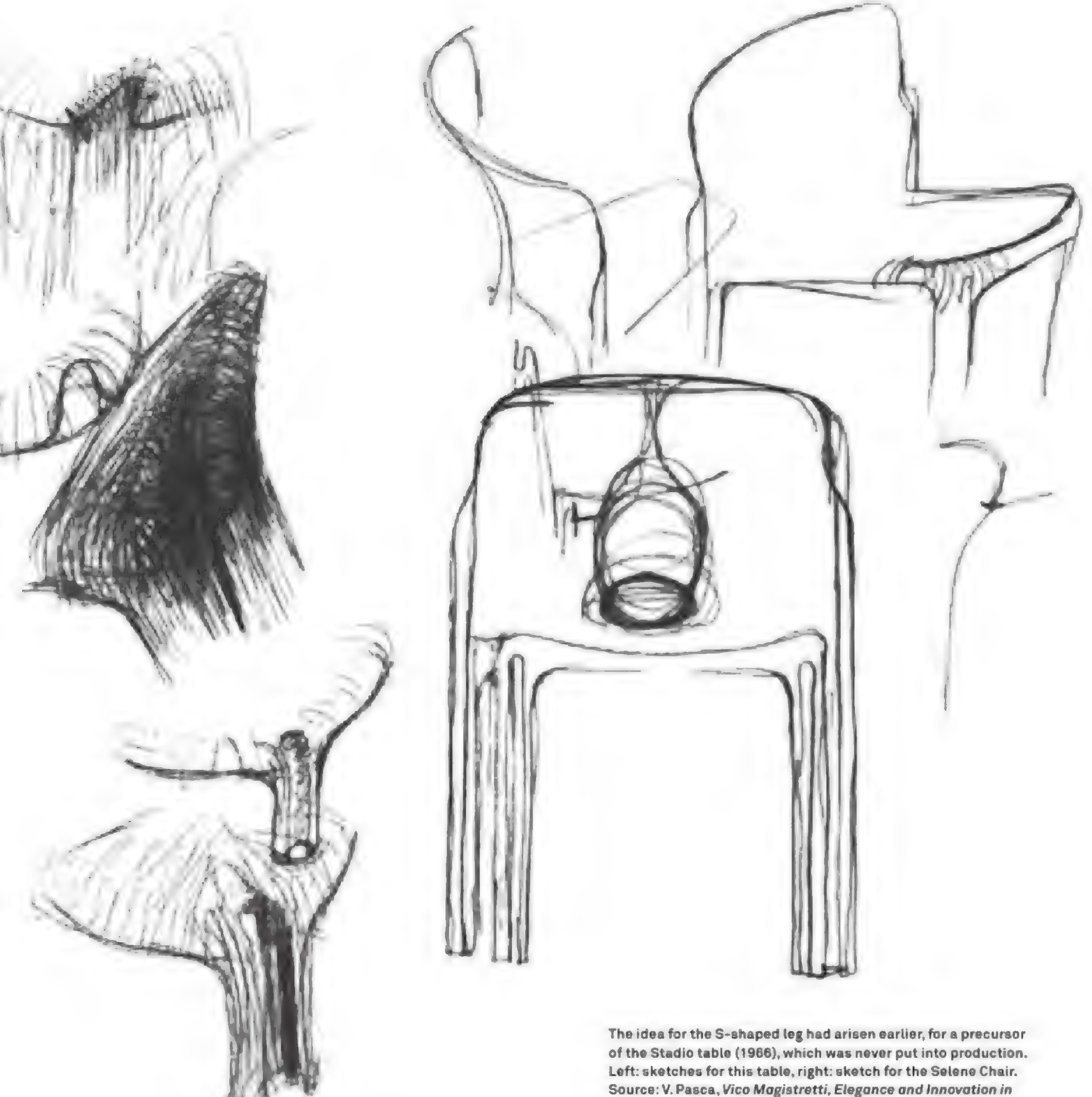


Vico Magistretti, chair (*Selene*), design 1968,
object after 1969
Inv. no. 20032032
Polyester, reinforced with glass fibre
45 × 76 × 47 × 50.5 cm
Artemide, Milan, model Selene
Lit.: *Domus*, no. 466 (September 1968), p. 38;
S. Giacomoni & A. Marcolli, *Designer Italiani*,
Milan 1988; C. & P. Fiell, *1000 Chairs*, Cologne,
2000, p. 444

A stackable chair with a high seat. It was made from a single unit consisting of polyester reinforced with fibreglass, and shaped by means of injection moulding. In order to ensure that the legs were stiff enough, the legs were given an S-shape in cross-section. As a result, the dark-brown glossy synthetic material appears to have been folded. The design was actually first tried with folded paper.

The literature gives various dates for the design of this chair, varying from 1961 to 1969. Magistretti himself claimed in an interview (Giacomoni) that he designed the chair in 1969, a date that is repeated in the book *1000 Chairs*. However, the chair had already been presented during the 14th Triennale in Milan in 1968. In the September issue of the magazine *Domus* of that year, the chair is displayed as 'a new design by Magistretti for Artemide, made of pressed epoxy resin reinforced with glassfibre'.

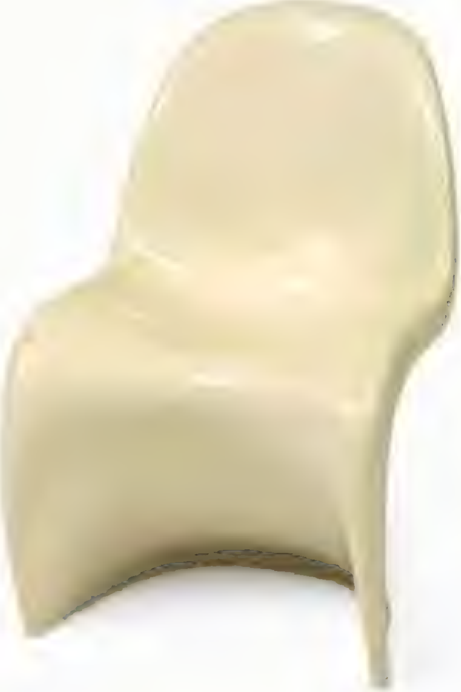
With the *Selene Chair* the aim was to design a chair that would have a recognizable and familiar appearance, despite the fact that it was made of synthetic material. The form of the chair was very complex, but extremely effective in terms of production technique: the chair could be manufactured as a single unit in an injection mould. Instead of drawing the chair right down to the finest details, Magistretti opted for designing



The idea for the S-shaped leg had arisen earlier, for a precursor of the Stadio table (1966), which was never put into production. Left: sketches for this table, right: sketch for the Selene Chair. Source: V. Pasca, *Vico Magistretti, Elegance and Innovation in Italian Design*, Thames & Hudson, London 1991, p. 38.

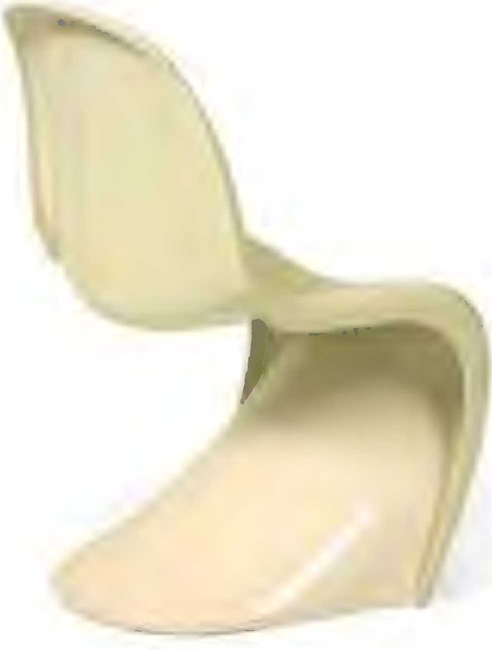
the mould in conjunction with a model-maker.

'You finally create a chair that distinguishes itself from everything that has been realized up to that point in time by not adhering to the rules but by listening to the possibilities that the new material whispers to you. In the mould, the material acts like honey. You must comprehend the expressive potential of this fact; modern technology won't give you anything if you cut yourself off from it,' according to Magistretti in *Designer Italiani*.

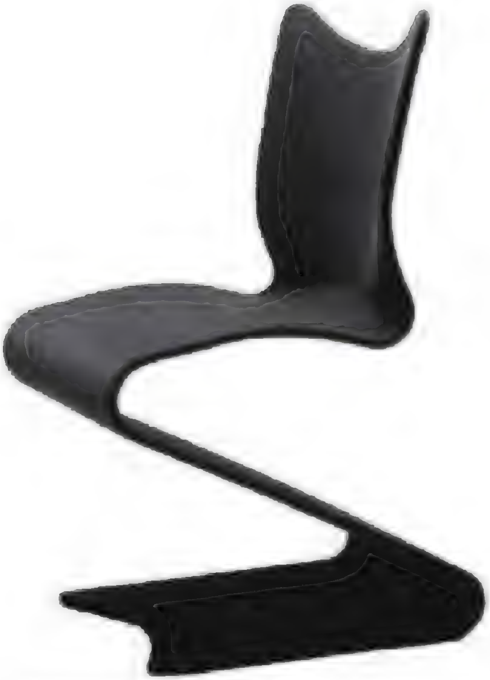


Verner Panton, chair (*Panton*), design 1957-1960, object 1983 post quam
Inv. no. 20032057
Polyurethane
43 × 83 × 48.5 × 59.5 cm
Herman Miller, Zeeland, Michigan, (1968-1971), (1973-1975); Vitra, Basel, (1968-1979); Horn GmbH & Co. KG, Rudersberg, (1983-1990); Vitra, Weil am Rhein, (1990-present)
Lit.: M. Lamarová, *Design and Plastics*, Um leckopr myslové Muzeum, Prague, 1972, p. 73; C. & P. Fiell, *1000 Chairs*, Cologne, 2000, p. 425; A. von Vegesack & M. Remmele, *Verner Panton*, Weil am Rhein 2000, pp. 74-99, 245; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 287
Donation from J.W. Kempenaar

The *Panton Chair* could be referred to as a cantilever chair if it were not for the fact that the concept of 'legs' would seem to be entirely inapplicable to this organic form in which the back, seat and legs merge into one another in one fluent movement. The direct source of inspiration for this chair appears to be the cantilever chair designed by Heinz and Bodo Rasch in 1927 and the *Zigzag Chair* by Gerrit Rietveld in 1932. When we compare the sketches for the *Zigzag Chair* and the *Panton Chair*, the same train of thought seems to have been followed: both designers intended to design a chair consisting of a single unit. This may explain why, despite their different manifestations, the chairs seem to be akin. Panton always denied that he was influenced by Rietveld's chair and maintained that that he was not aware of the *Zigzag Chair* when he designed the *Panton Chair*, somewhere between 1957 and 1960 (a different design for a plywood chair made of a single unit, the so-called *S-Chair* dating from 1956, displays more resemblance to the *Zigzag Chair*. The chair was manufactured by Thonet).



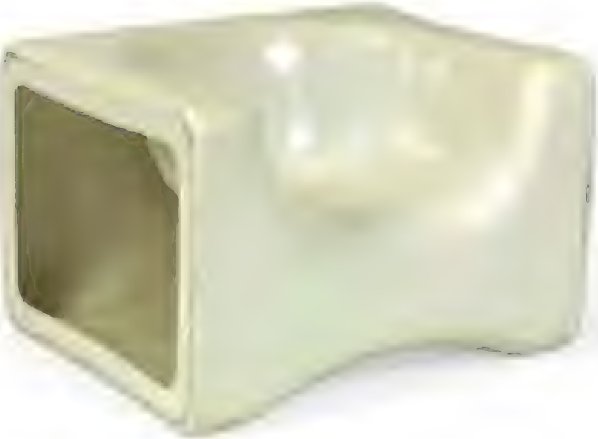
Six years separated the creation of the first prototype and the final production model. In the intervening years, Panton attempted to stimulate various manufacturers to fabricate his design. Ultimately it was Willy Fehlbaum, the producer at Vitra with a licence for Herman Miller designs,



The S-Stuhl, Thonet model 275, was pressed from a single sheet of plywood. Source: A. von Vegesack, P. Dunas, M. Schwartz-Clauss (eds.), *100 Masterpieces aus der Sammlung des Vitra Design Museums*, 1996, p. 164.

who was confident enough to put the chair into production. Nevertheless, for manufacturing reasons, the original design did have to undergo considerable alterations. For instance, the chair had to be stackable. Despite its scanty dimensions, the final production model made of fibreglass-reinforced polyester was exceptionally strong. It was possible to realize refined details by making maximum use of the properties of the material. However, the polyester model turned out to be a disaster in production terms: when the chair was taken from the mould, a substantial number of man-hours had to be devoted to sandpapering the inside. And even after this intensive processing, was smooth finish was still almost impossible. It the following years, the producers sought feverishly for other materials that they could use for the production of the *Panton Chair*, including polyurethane hard foam (which was still relatively labour-intensive at that time) and thermoplastic polystyrol. This material could be generated by means of a new procedure, so-called 'injection moulding'. It turned out, however, that this material was not durable: after a period, the chairs suffered badly from wear and tear and age. This substantially damaged the reputation of the chair, and production dropped to a minimum for several years.

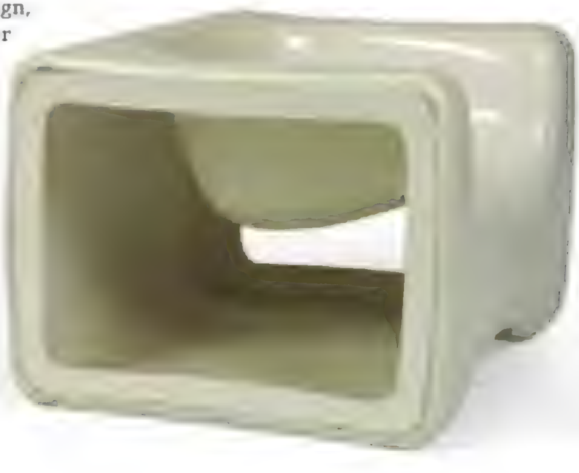
Since the nineties, the chair has again been put into production, now in polypropylene. It terms of appearance, this chair most resembles the polystyrol variant from 1971-1979. However, polypropylene is a more flaccid and softer material so that the details are reproduced much less finely. Due to its susceptibility to scratches and scrapes, the high gloss of the previous models had to make way for a mat and granular surface. However, the new production process has made manufacture much easier and the chairs lighter, so that they are much less expensive. After all these years, the *Panton Chair* has finally become a mass product.

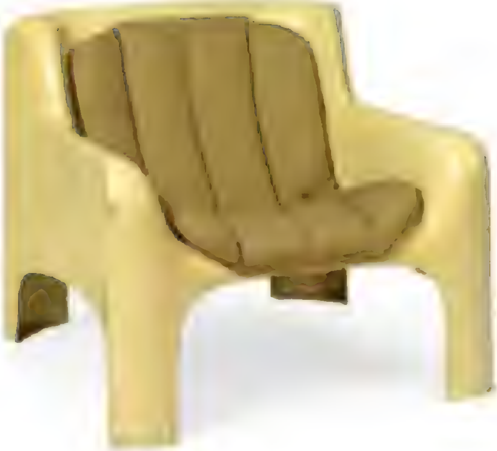


Alberto Rosselli, easy chair (Play), 1969
Inv. no. 20032168
Glass fibre reinforced polyester
33 × 55.5 × 84 × 71 cm
Saporiti, Besnate
Lit.: G.K. Koenig, A. Fracassi, S. Riva: Stile Industria: Alberto Rosselli, Universita di Parma, Parma 1981, p.152; for Moby Dick and Jumbo: E. Ambasz (ed.), *Italy, the New Domestic Landscape*, MoMA, New York, 1972, p. 33; C. & P. Fiell, *1000 Chairs*, Taschen, Köln 2000, p. 431
Donation from M. v.d. Meer

Easy chair with armrests. The chair has been pressed from a single fibreglass plate. With the exception of the sides, the chair is completely closed. The inside has small bumps and the outside is smooth and shining white.

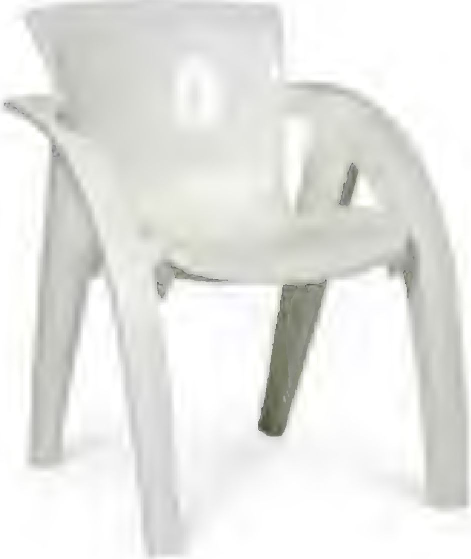
Rosselli's interest in new materials, particularly synthetic materials, is especially evident in the futuristic furniture designs of glassfibre-reinforced epoxy that he produced for Saporiti. The *Jumbo* (1969) and the *Moby Dick* (1974), which resembles a whale to a certain degree, are particularly noteworthy examples. The *Play* easy chair was a more pragmatic design, of which several examples could be lined up for use in a waiting room.





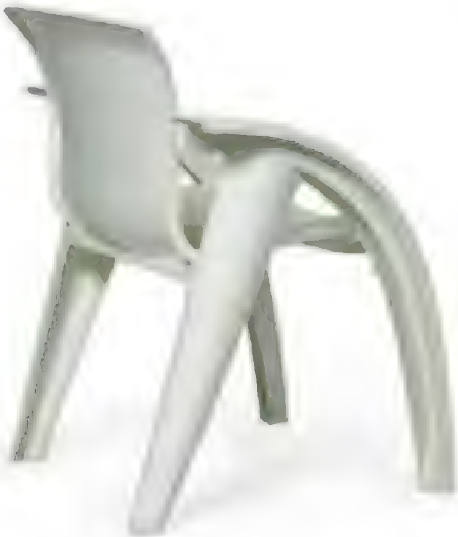
Carlo Bartoli, easy chair (*Gaia*), 1967
Inv. no. 20032077
Glass fibre reinforced polyester; foam rubber, textile
36.5 × 69 × 78.5 × 79.5 cm
Arflex, Giussano
Lit.: *Domus*, no. 456 (November 1967), p. 36; M. Lamarová, *Design and Plastics*, Um leckopr myslové Muzeum, Prague, 1972, pp. 25, 83; *MD*, no.7, 2001, pp. 62-66

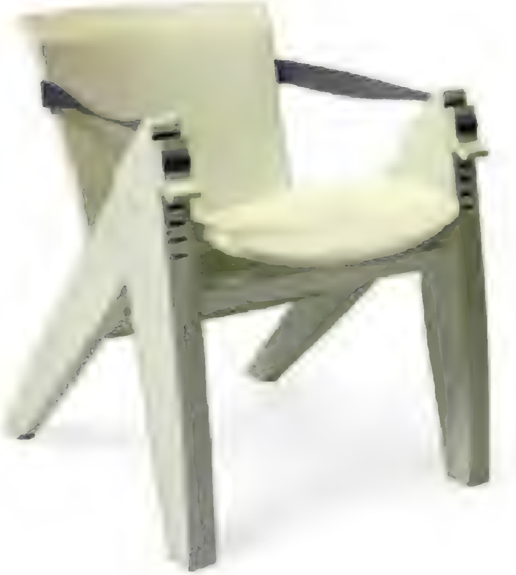
An easy chair with armrests. The chair has been pressed from a single synthetic (ABS) plate. This model has a cushion embedded in the seat and the backrest, although the chair was also available without a cushion. The *Gaia Chair* has been included in the design collection of the MOMA in New York.



Frog Design, garden chair with armrests, 1987
Inv. no. 20032008
Recycled plastic
43 × 80 × 63 × 63.5 cm
Jardin Nederland, Rijen
Lit.: U. Brandes, *Hartmut Esslinger & Frog design*, Göttingen 1992, p. 132

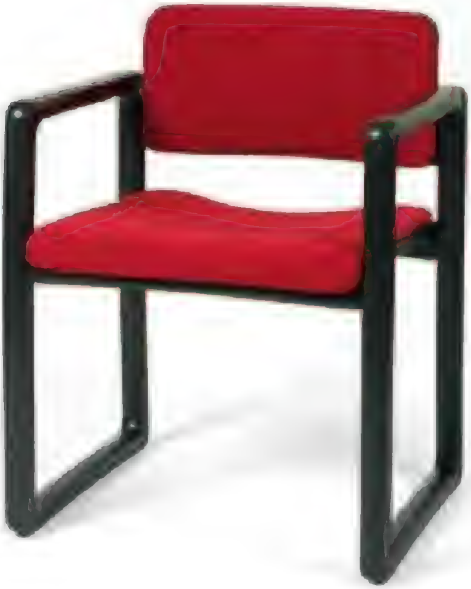
Garden chair with armrests. Beams extend between the legs, supporting the seat and back which are made from a single unit. The chair is made of recycled synthetic material around 5 mm thick. This chair is a part of a series of items of garden furniture that includes, besides the chair with inv. no. 20032010, a synthetic table.



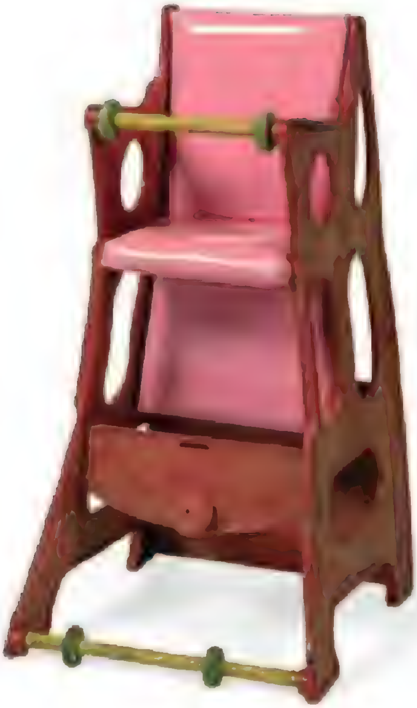


Frog Design, garden chair with arm rests, 1987
Inv. no. 20032010
Recycled plastic; woven synthetics
74.5 × 59.5 × 71.5 × 46 cm
Jardin Nederland, Rijen
Lit.: U. Brandes, *Hartmut Esslinger & Frog design*, Göttingen 1992, p. 132

Garden chair with armrests, adjustable, foldable. The chair is made of recycled synthetic material around 5 mm thick. Beams extend between the legs, supporting the pre-shaped back that is connected to the supporting frame by means of a hinge. The armrests are formed by aluminium-coloured, woven synthetic bands that also support the back. By adjusting the length of the band, the slope of the backrest can be adapted.

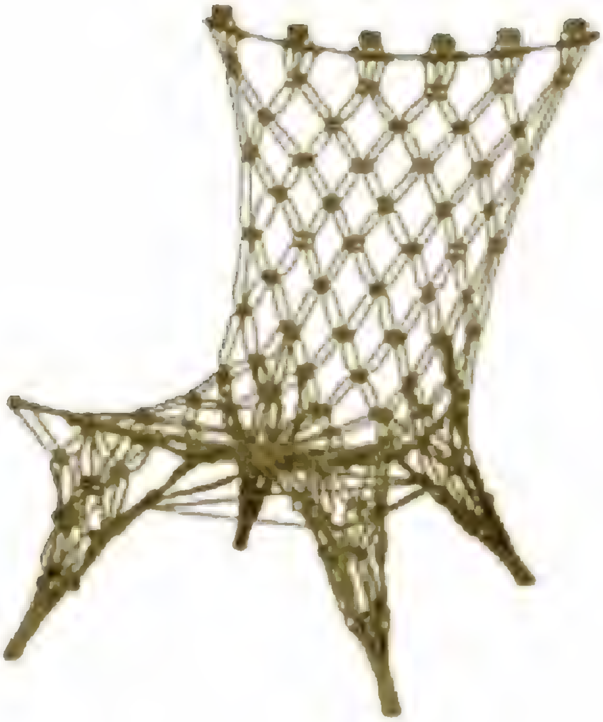


Just Meyer, chair, 1973
Inv. no. 20032076
Plastic (H.I.P.S.); foam rubber, textile
47.5 × 77 × 58 × 56 cm
Kembo, Oosterbeek, Upsilon series model number 266
Lit.: P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, pp. 58, 136



Unknown, child's high chair, rocker and cart all in one (*Hokus Pokus Multimøbel*), 1970-1980
Inv. no. 20032060
Plastic; synthetic textile
56.5 × 83.5 × 51 × 43 cm
OPOS, Sweden, Hokus Pokus Multimøbel

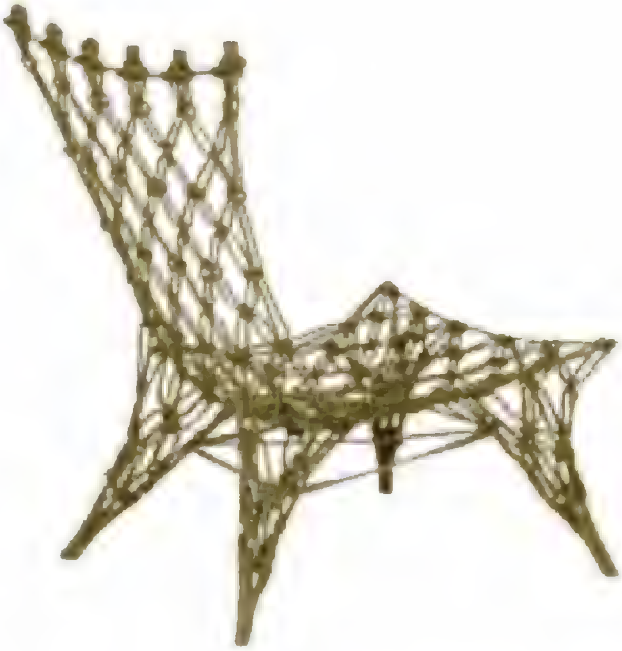
Marcel Wanders, easy chair (*Knotted Chair*), 1996
Inv. no. 20032253
Aramid fibre cord with carbon core, drenched in epoxy resin
22 × 74 × 56 × 60 cm
Marcel Wanders
Lit.: R. Ramakers & G. Bakker (eds.), *Droog Design*, Rotterdam 1998, p. 123; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, pp. 151, 152, 411



As the name suggests, this easy chair, the *Knotted Chair*, was manufactured by knotting aramid fibre cord with a carbon core into a chair shape. The cord was then impregnated with epoxy resin and suspended in a frame to harden. Gravity then creates the definitive form.

This low lounge chair originated during a workshop that *Droog Design* organized in conjunction with the *Laboratorium voor Luchtvaart- en Ruimtevaarttechnologie* (Laboratory of Aerospace Engineering) of Delft University of Technology in 1996. It combines the textile macramé technique of the sixties with a high-tech invention: aramid cord with a carbon core and epoxy resin. This combination ensures a solid construction that is surprisingly light and transparent. As in some of Gaudi's work, the ultimate shape is determined by gravity. The chair has now been included in the collection of the Italian firm Cappelini.

It is a typical product of Wander's multidisciplinary approach, which enables him to conceive products that combine existing and new insights and techniques in an unorthodox way.



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p. 153

Wood

Wood, including woven twigs, is the oldest and most classical material used to make furniture. Although metal has also been applied for many centuries in chair-making, this occurred to a far lesser extent; moreover, it was always much more exclusive due to the amount of processing required. As far back as the Middle Ages, sitting chests, folding chairs and three-legged stools* were made of planks, turned wood or painted twigs. In the domain of chair production, it was only from the 18th century onward that wood had any genuine competition from other materials. The budding industrial revolution and the exploitation of the colonies made cast iron and later steel, rattan and bamboo available as building materials. In order to come to terms with these developments, the way in which wood is processed has also changed in the last two hundred years. After all, the industrial revolution also provided the woodworking industry new opportunities, in terms of both tools and technology.

For example, Michael Thonet began to experiment in Boppard in 1819 with chairs made of glued beech wood. This early lamination technique was time-consuming, however, and sawing the wood into strips meant that much of the material was lost. Eventually Michael Thonet embarked upon a new route and began to experiment with chairs made of bent solid beech. The chairs that he produced in Vienna in around 1850 became enormously popular in public places. The reason for this was their simple, mass production method, which ensured a low price. In addition, the components could easily be standardized, so that they were interchangeable. Slightly different types of chair could be produced, and the customer could choose from different legs, backrests and seats, for example. When Michael Thonet's patent expired in 1869, other furniture manufacturers, mainly in Central Europe, began to produce chairs from bent beech wood.* The consequence of this was that in 1911, during the heyday of this industry, 52 enterprises and more than 60 factories were engaged in making bent beechwood furniture, employing new fewer than 35,000 workers.

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p. 220

Inv. no. 2003207
p. 172

Thonet chairs were generally quite simple in their form, without pronounced features, and were light, both physically and optically. In that respect they differed from the chairs in fashionable interiors, where decorative historicism was all the rage at that moment.* The bent beechwood chairs produced by the Thonet company and its successors combined technological progress with a new outward appearance. As a consequence, these chairs became popular among Functionalist architects

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(*Nieuwe Zakelijkheid*). For example, Le Corbusier furnished his houses with Thonet chairs at the Weissenhofsiedlung in Stuttgart in 1927, and even Mart Stam placed Thonet chairs along with his own cantilever tubular steel chairs in the houses he designed. However, Thonet chairs were not the only 19th century chairs without excess decoration: neoclassical items and Biedermeier furniture were also characterized by their straightforward elegance.* In addition, there were also the simpler chairs, often with a rush mat seat, that could be found in rural areas or in the kitchens of prominent houses. The primal type of such chairs in the Netherlands was the Brabant knob chair, which first appeared in the 17th century. The back legs, which were mostly rounded but could also consist of merely stripped branches, extended upward to form the backposts. This type of chair was originally produced in small-scale workplaces in the countryside.

During thee last quarter of the 18th century, a chair industry developed on a larger scale in Culemborg. The square legs of the Culemborg chair were sawn into the appropriate shape, so that the backrest inclined backwards a little, thus making the chair more comfortable.* In the 1860s, producers in Oirschot began to produce American-style chairs with a modelled wooden seat. The backrest consisted of posts that leant backwards and were clamped in the seat. These robust yet comfortable chairs soon became popular in public places.[1]

The pursuit of a new, straightforward and 'responsible' form, which was a reaction to the historicizing styles of the 19th century, was not always accompanied by technological progress. A series of designers worked on new furniture forms in a traditional craftsmanlike way: the members of the Arts & Crafts Movement, Frank Lloyd Wright, Charles Rennie Macintosh, Josef Hoffmann, and others. In the Netherlands, Berlage gave the innovation of furniture design an impulse at the end of the 19th century. Within the erstwhile prevailing tradition of abundantly decorated, historicizing furnishings and organic Art Noveau, the austerity of Berlage's furniture was the herald of the transition to a modern style in building and furniture.* Berlage's early furniture expresses this severity in an uncompromising way, an aspect that occasionally induced resistance among critics. In 1916, J.F. Staal wrote on Berlage: 'His furniture is ponderous and has the appearance of melancholy, serious children.'[2]

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The work of Gerrit Thomas Rietveld constituted the next step toward the modern, austere item of furniture. Although Rietveld worked in a traditional manner, he regarded his furniture as an industrial product. Wholesale planks and beams were a kind of semi-manufactures that would enable

[1] J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 50-53.

[2] J.F. Staal, 'Berlages Meubelen', in: K.P.C. de Bazel et al., *Dr H.P. Berlage en zijn werk*, Rotterdam 1916, p. 62.

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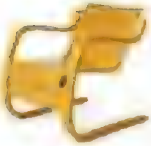
p. 210

industrial production – the fact that this idea was not realized can be attributed to Rietveld's outspoken avant-gardist tastes and to the occasionally technological shortcomings of his designs. A striking feature of his chairs is the absence of upholstery, which gives them an austere and rudimentary character. Rietveld's typical wooden connections also deny, at least visually, the classical structure of the furniture: the vertical and horizontal parts do not meet at the connections but, rather demonstratively, just next to one another.* Rietveld did not avoid the use of bolts and screws in the connections, which was a somewhat unusual feature of quality furniture in those days.

In the 20th century, the development of plywood and laminated wood brought about the combination of technological progress and a new style of sitting furniture. Besides Michael Thonet's experiments in the first half of the 19th century, the Luterma Company, run by A.M. Luther from Estonia, played a leading role from 1900 onward. This company manufactured plywood components for benches and chairs for trams, railway stations, and other public places. These standardized components were subsequently sold to other furniture makers at home and abroad.

Further major development of bent plywood and laminated wood is inextricably linked to the Finnish architect Alvar Aalto, who was largely motivated by his reservations concerning tubular steel furniture, which was the latest trend in avant-garde circles in the 1920s. The cool allure of tubular steel furniture stimulated him to carry out his first experiments with bent plywood seats on a steel frame, and then to produce the frame itself in laminated wood. The timber industry in Finland was quite advanced and Aalto succeeded in developing laminated wooden chairs that were both comfortable and austerely modern. He also created a cantilever easy chair in which the ultimate constructive possibilities of the material became evident.*



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p. 236

Aalto's work was first emulated in Europe, by Marcel Breuer among others, but further development occurred in the United States. There, Charles and Ray Eames applied the new technique of high-frequency lamination, a technique that had been developed in the aircraft industry and by means of which they could make ergonomically formed plywood for their chairs. In the early fifties, the Dane Arne Jacobsen designed a seat/backrest from a single plywood sheet by means of complex distortion. This trend was further developed by his compatriots Jørn Utzon and Grete Jalk in imaginative forms in the sixties.

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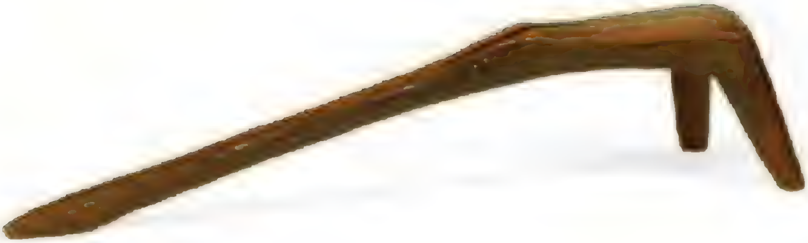
Another invention, from as far back as 1950, was applied in the *AX Chair** by Peter Hvidt and Orla Mølgaard-Nielsen. This concerned a lamination technique that had been developed for tennis rackets, in which a mahogany core was glued between two layers of beech wood. On the same basis, it became possible to generate the Y-split of rear leg, seat frame and backpost all at once.

A more recent development in the use of laminated wood is the *Powerplay Chair* (1990–1992) by Frank Gehry. The entire chair has been constructed from thin strips of plywood that, woven together, comprise the frame, seat and backrest all at once.

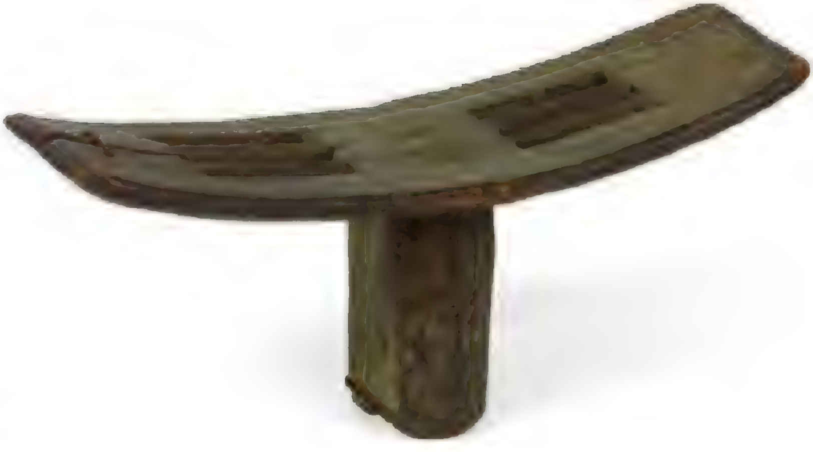
In the Netherlands, quite some time passed before the furniture industry began to work with laminated wood. It was Paul Bromberg who aroused the interest of the furniture industry via an article in the November-December issue of *Interieur* magazine in 1946. Having visited the Eames exhibition in the Museum of Modern Art in New York in July of that year, he wrote about the *LCW Chair* (Lounge Chair Wood), that 'the chair was an excellent sit, that one cannot capsize, and that the suspension is just as comfortable as that of a heavily upholstered easy chair'.* He gives a comprehensive description of the technique and lists the advantages in comparison to the old-fashioned method that was more tardy and laborious. This information formed the overture for the breakthrough of laminated wood in the Netherlands. From 1946 onward, three companies (UMS, later called Pastoe, Artifort, and C. den Boer) vied for dominance in a furniture line in which the technique of high-frequency lamination was applied. This competition was eventually won by the Den Boer company, which surprised the Dutch market with designs created by Cor Alons and J.C. Janssen in 1948. In subsequent years, other firms brought out new furniture lines in laminated wood. The new technique ensured the definitive breakthrough of industrial design in the furniture industry. After WWII, the demand for furniture with a modern allure increased enormously. Laminated wood furniture harmonized with the spirit of post-war renovation, and fitted admirably into the increasing number of new houses. Surprisingly enough, little attention has been paid to the real Dutch pioneer of high-frequency laminated furniture: Han Pieck, who, with his LAWO (Laminated Wood) Company had already brought a chair made from a single sheet of laminated wood on to the market in 1946, even before Bromberg had published his article.*

The development of wooden chairs in the past thirty years has not produced such striking items as the bent plywood chair or the lamination technique that made such an impact in the previous part of the twentieth century. However, chairs consisting of cardboard do form an interesting feature – after all, cardboard consists of wood fibre. In the 1960s, the use of cardboard was a symbol of temporary and of alternative design, such as the *Papp Chair* (1967) by Peter Raacke. A more interesting development was the experimental series entitled *Easy Edges* by Frank Gehry from 1972, which was made from cardboard plywood. It is said that the architect removed this cheap and popular series from production in order to protect his reputation as a serious architect. In general, post-modern furniture designs tend to display mainly decoration and exceptional form emphasis, which is perhaps illustrative of more recent developments.

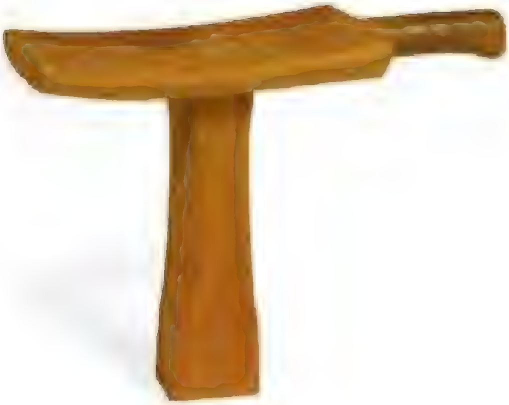
From the beginning of the 20th century, the development of furniture moved gradually from small-scale workplaces to factories, but the last thirty years seem to show a reversal of this trend. The concept of 'design' was once introduced for a design that takes into account, or is the result of, industrial production in contrast to manual craftsmanship. Whereas furniture design previously shifted from craftsmanship to industrial design, it is now moving from industrial design back toward craftsmanship.



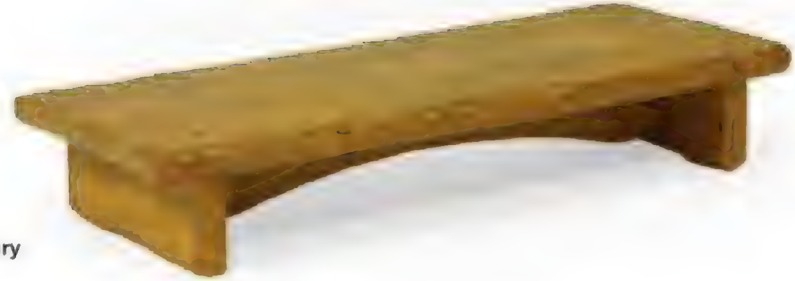
Unknown, stool, unknown
Inv. no. 20032084
Wood
20 × 20 × 26 × 95 cm
Unknown, African



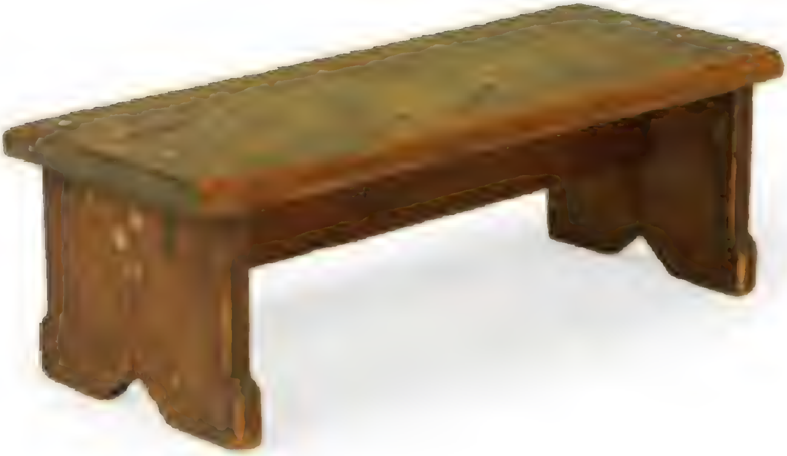
Unknown, stool, unknown
Inv. no. 20032083
Wood, leather
15.5 × 18.5 × 43.5 × 14.5 cm
Unknown, African



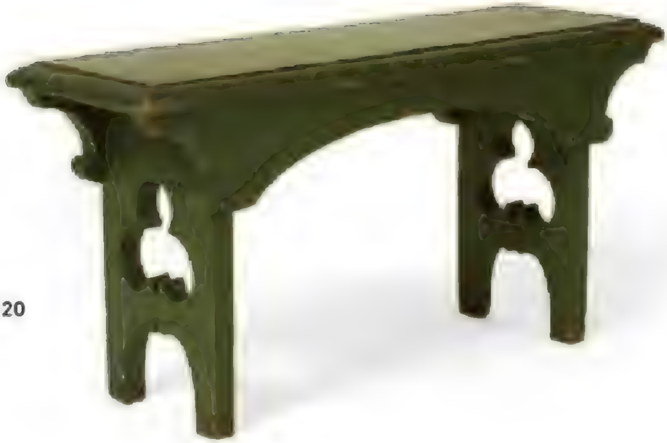
Unknown, milking stool with handle, approx. 1970
Inv. no. 20032122
Elm
29 × 29 × 41 × 16 cm
Unknown
Lit.: H. de Jong, *Stoelen*, Delft 1974, p. hout 04-01



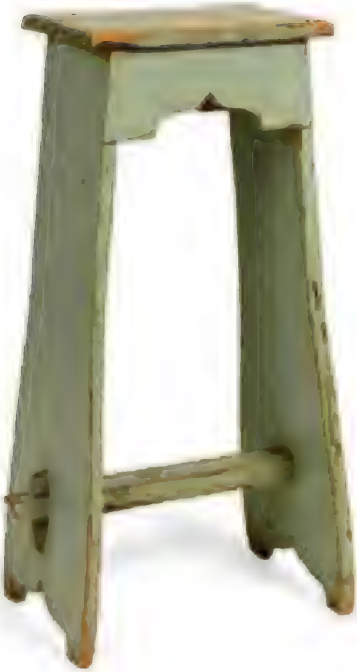
Unknown, footrest, 19th century
Inv. no. 20032209
Pine, 'wooded' as oak
11.5 × 11.5 × 65 × 27 cm
Unknown



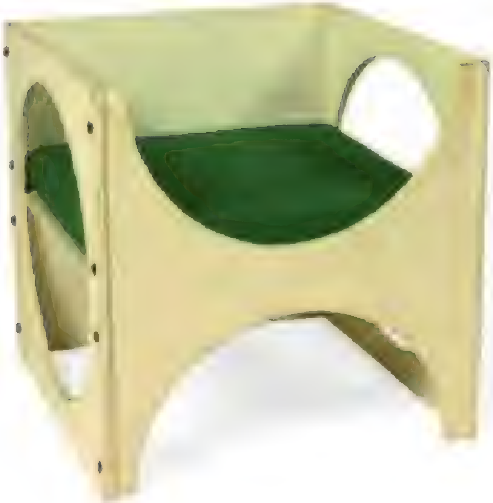
Unknown, bench, 19th century
Inv. no. 20032210
Pine
20 × 20 × 61 × 24.5 cm
Unknown



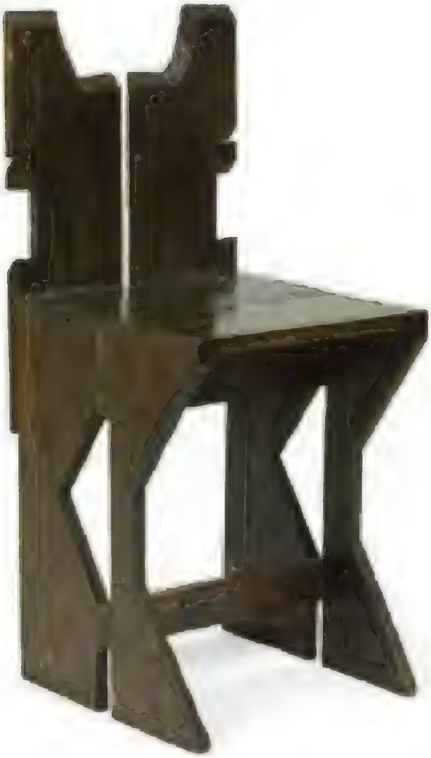
Unknown, church pew (neo-Gothic), 1860–1920
Inv. no. 20032058
Pine, painted sea green
41 × 41 × 81.5 × 27
Unknown



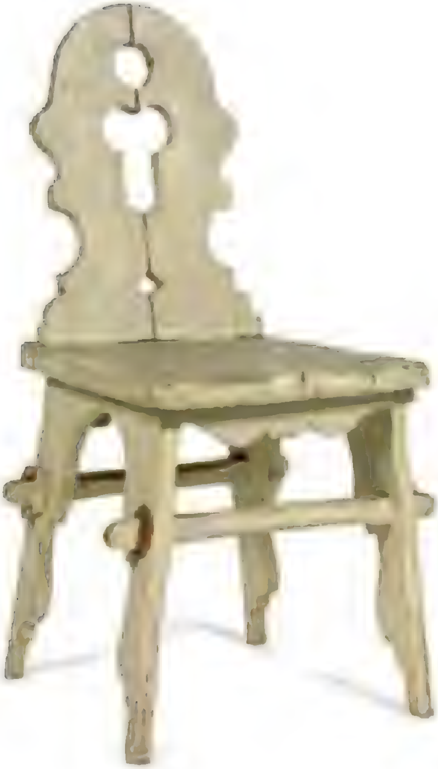
Unknown, drawing stool, 1900–1925
Inv. no. 20032126
Wood
84 × 84 × 49 × 30 cm
Unknown



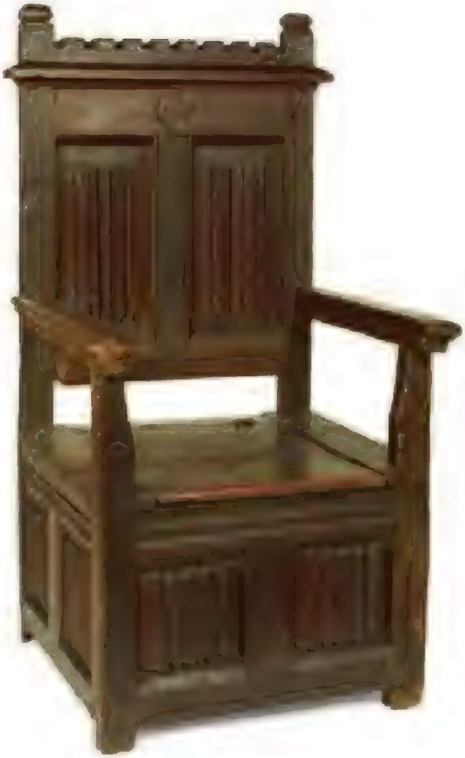
Unknown, chair with armrests, 1960–1985
Inv. no. 20032135
Plywood, painted white; foam rubber, cotton
39.5 × 60 × 60 × 60 cm
Unknown



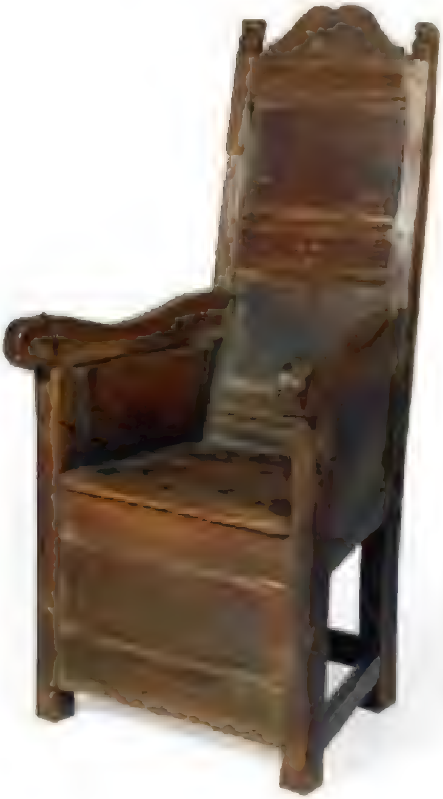
Unknown, chair, 1960–1990
Inv. no. 20032236
Wood
48.5 × 83 × 36 × 38 cm
Unknown



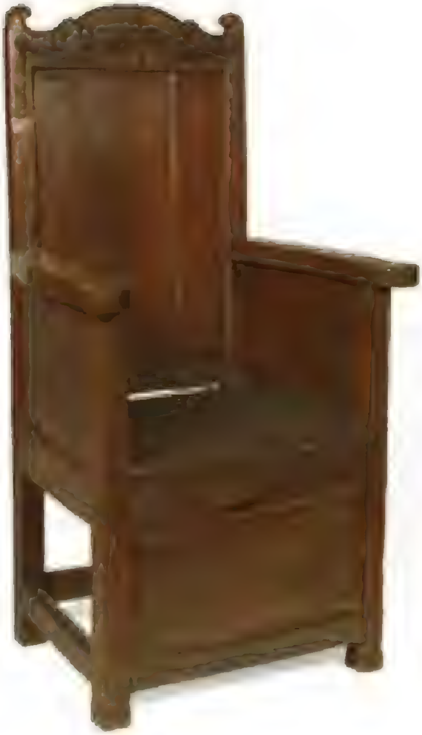
Unknown, chair, unknown, end of 19th century (?)
Inv. no. 20032207
Beech, painted light-grey
45 × 92 × 48 × 49 cm
Unknown



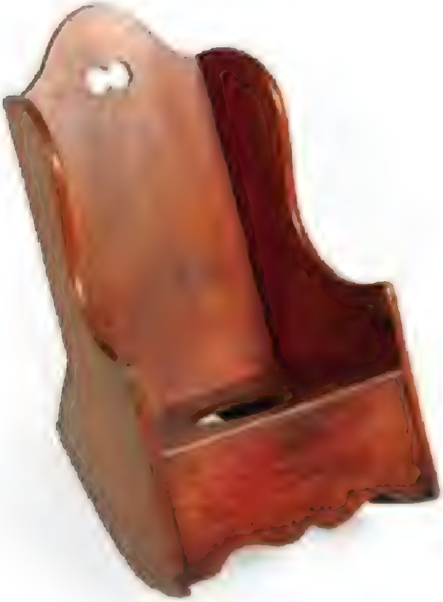
Unknown, chair with armrests (chest chair), 15th century style, object from 19th century
Inv. no. 20032096
Oak
45 × 126 × 65 × 64 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*. Martinus Nijhoff, The Hague 1918, p. 9; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 34



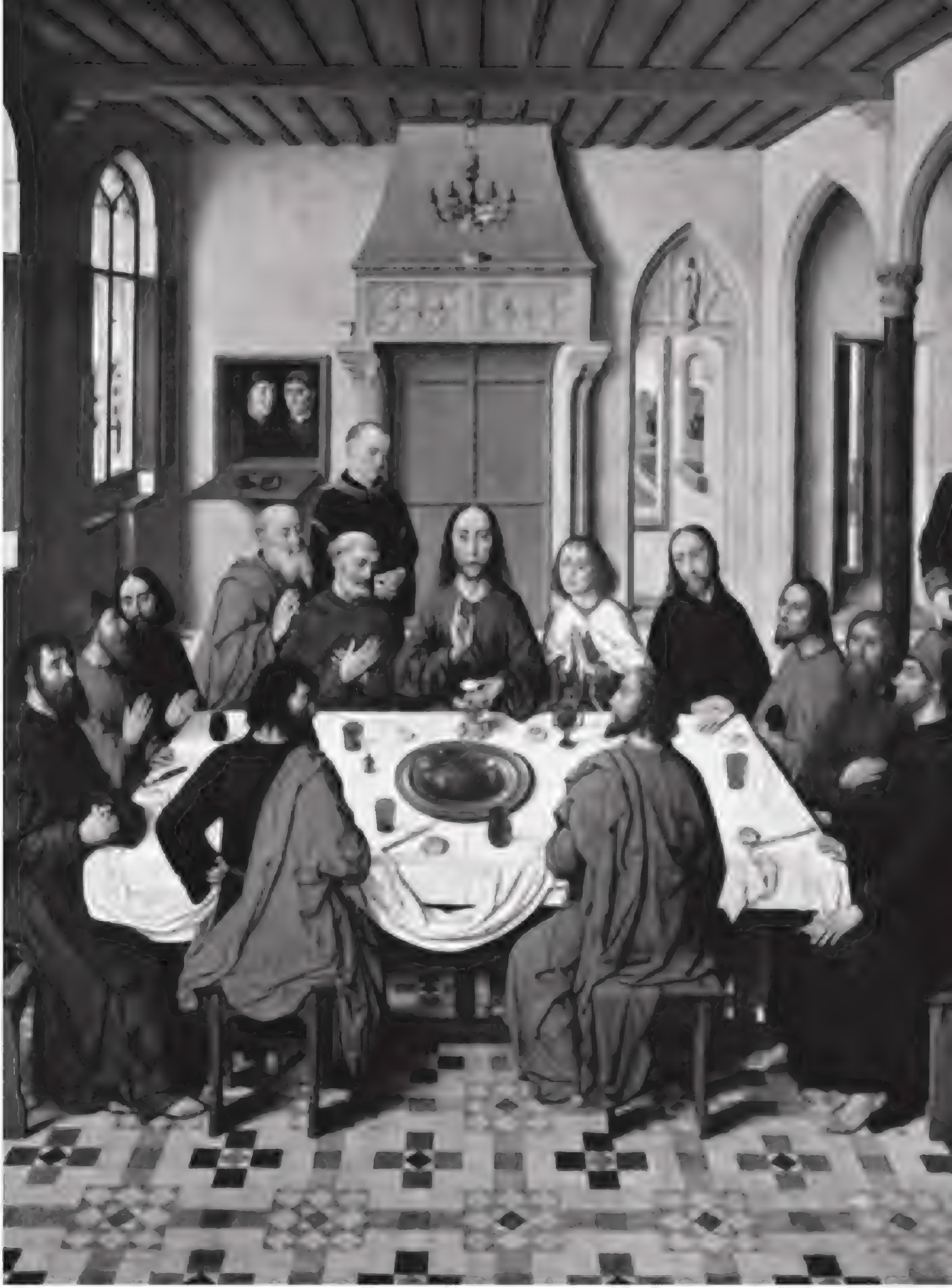
Unknown, chair with armrests, 17th century (?)
Inv. no. 20032114
Wood
47 × 129.5 × 61 × 64.5 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 76



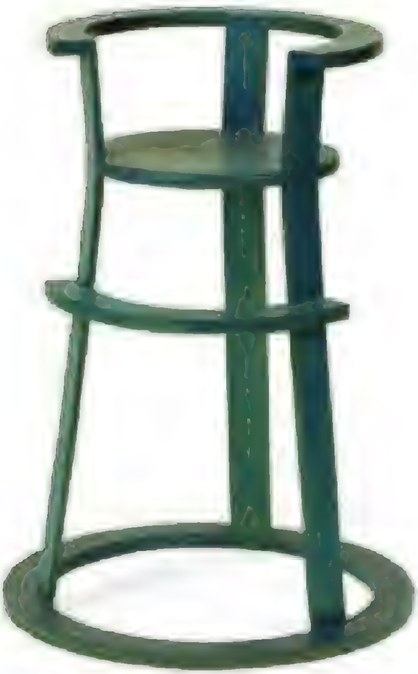
Unknown, chair with armrests, late 18th century (?)
Inv. no. 20032115
Waxed oak
48 × 129 × 69 × 51 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 76



Unknown, children's chair, rocking, with space for po, 1850–1900 (?)
Inv. no. 20032206
Alder, varnished red, also with clear lacquer
27 × 61 × 37.5 × 56 cm
Unknown



The Last Supper by Dieric Bouts, 1464-1467. Source: J. Lassaigne, G.C. Argan, *XV Siècle*, series: *Les Grands Siècles de la Peinture*, Skira, Geneva 1955, p. 148.

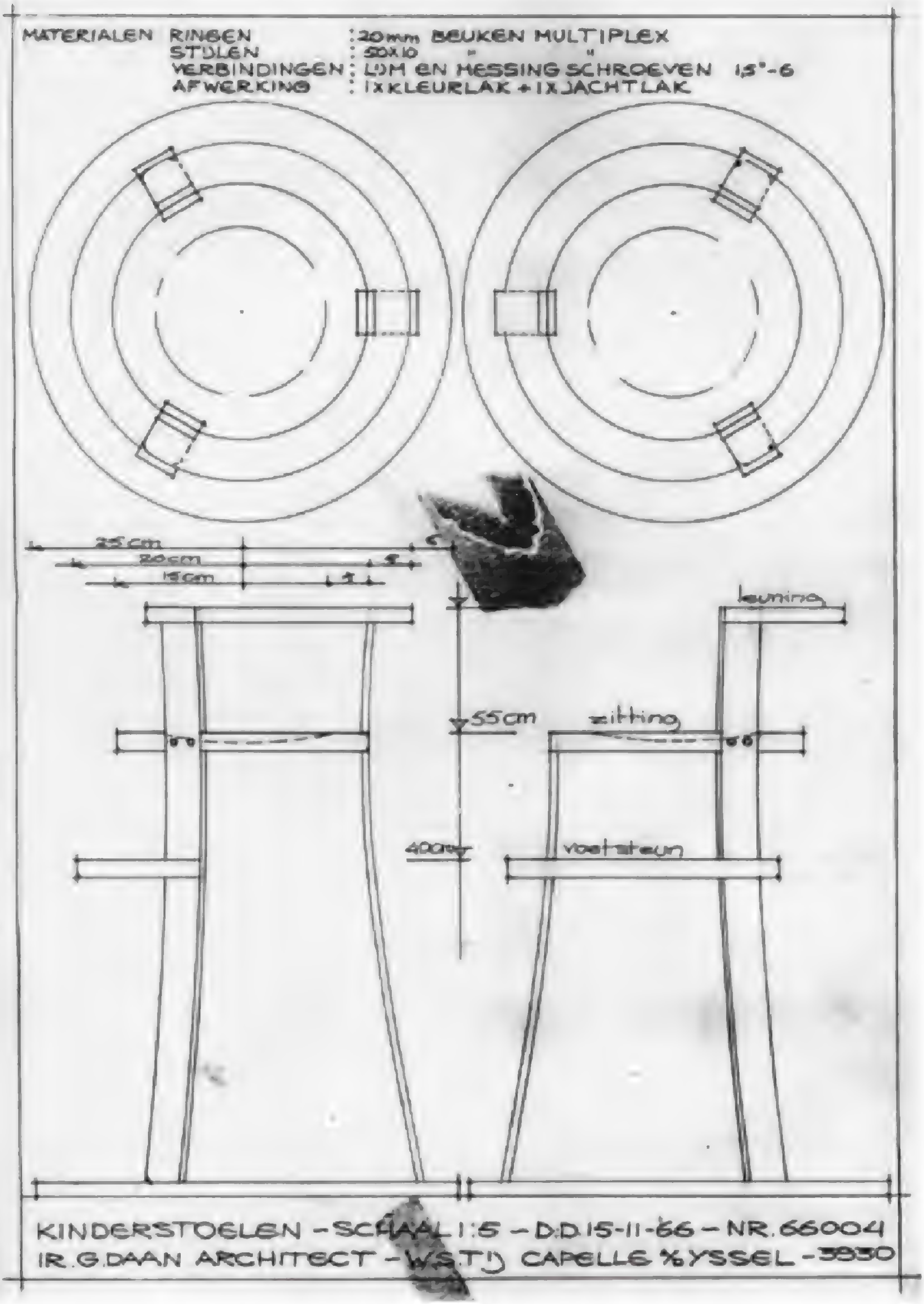


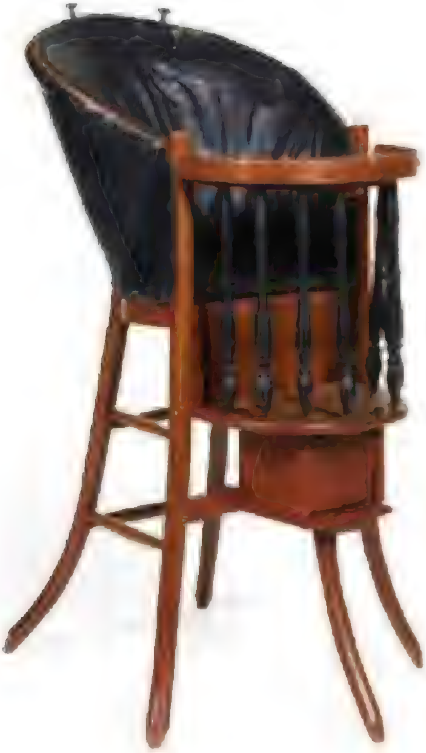
Gunnar Daan, children's chair, 1966
Inv. no. 20032182
Birch plywood, varnished and lacquered
55.5 × 69.5 × 49.5 × 49.5 cm
Gunnar Daan; sales by Metz & Co., Amsterdam
Lit.: B. Colenbrander, *Gunnar Daan, architect*,
Rotterdam 1995, pp. 120-121

A round children's chair with a high seat. The chair is made of blue-varnished and clear-lacquered birch plywood. The basis of the chair consists of a series of circular wooden rings and a round surface. This last part forms the seat, while the rest of the circular shapes form the backrest, the footrest, and the base. Three standards are connected to the round parts by means of hollows and dowels. The three standards are slightly curved.

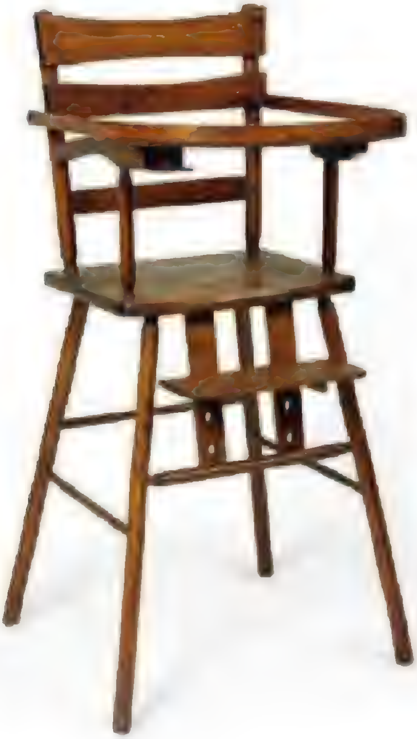
The form language that the Frisian architect Gunnar Daan uses in his architecture is a geometric idiom of rectangles, triangles and circles. His obsession with geometry is also clearly visible in his furniture designs. Some chairs betray the influence of Gerrit Rietveld. Two of his chairs would appear to be improved versions of Rietveld's *Military Chair*: the hard wooden seat has been replaced by a flexible plane of plywood or leather. In one of the chairs, the wooden components of the *Military Chair* have been replaced by PVC tubes with sealing caps. Daan began designing chairs when he was in national service, and put them together in his leisure time. The children's chair was designed for his own children: at that time, he lived with his wife and four children on a houseboat. To save space, he designed a compact children's chair that was easily constructed. The rings and seat could be sawn from a sheet of plywood measuring 50 cm by 50. The three standards were made of a slightly thinner sheet of plywood. For a time, the children's chairs were sold by *Metz & Co.* at a price of 85 guilders (40 Euro) of which Daan received 18 guilders (8 Euro). His frustration about the profit margins increased due to the fact that he occasionally got his chairs back if there was a scratch on them. From then onward, he made little effort to sell serial products, although he has continued to design furniture.

The drawings for the chair clearly indicate the way in which the various circles and rings can be efficiently sawn from a single sheet. Source: O.M. archives.

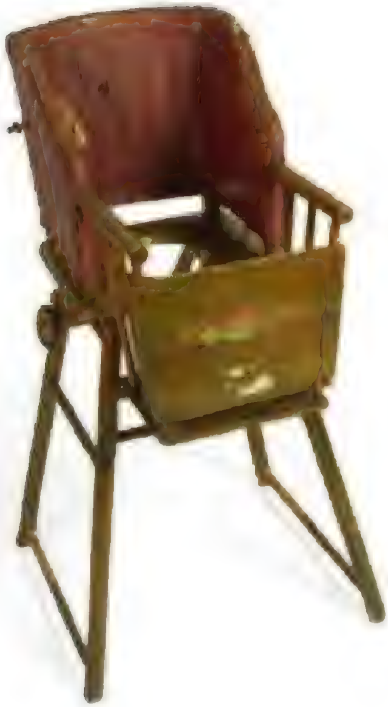

MATERIALEN RINGEN : 20mm BEUKEN MULTIPLEX
STIJLEN : 50X10 " "
VERBINDINGEN : LIJM EN MESSING SCHROEVEN 1,5"-6
AFWERKING : 1X KLEURLAK + 1X JACHTLAK
25 cm
20 cm
15 cm
5
5
5
leuning
55 cm
zitting
40 cm
voetsteun
KINDERSTOELEN - SCHAAL 1:5 - D.D. 15-11-66 - NR. 66004
IR. G. DAAN ARCHITECT - W.S.T'IJ CAPELLE %YSSEL - 3930



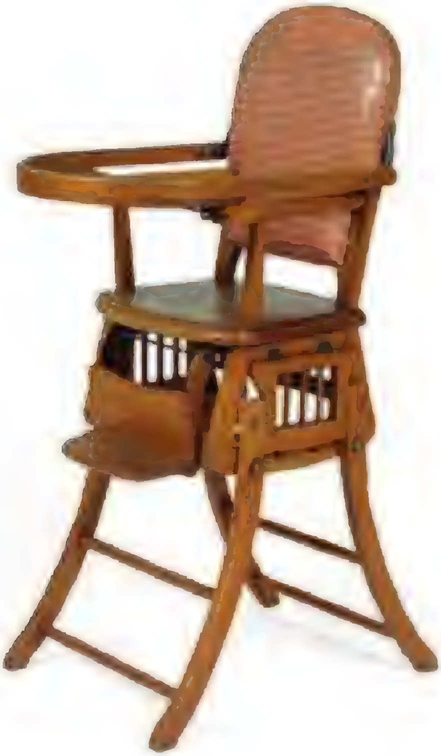
Unknown, children's chair with table leaf, space for po and footstove, 1850–1900
Inv. no. 20032105
Elm, upholstery of oilcloth, metal
59 × 96 × 52 × 58 cm
Possibly Van Gaasbeek & Van Tiel Stoomstoelenfabrikanten (Steam chair manufacturers), Culemborg, model 25
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 51, 547



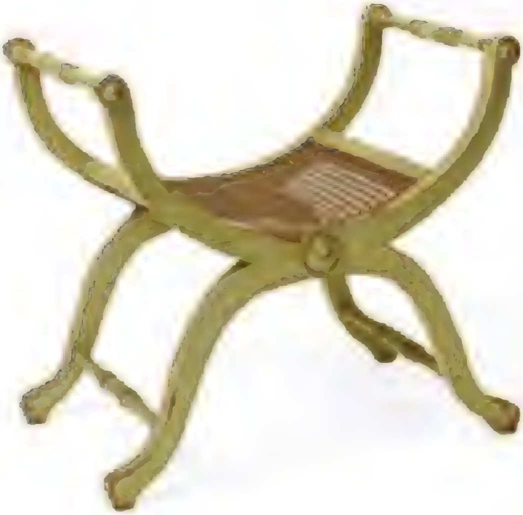
Unknown, children's chair, 1920–1950 (?)
Inv. no. 20032184
Beech, clear varnished; plywood
57.5 × 95 × 49 × 57.5 cm
Unknown



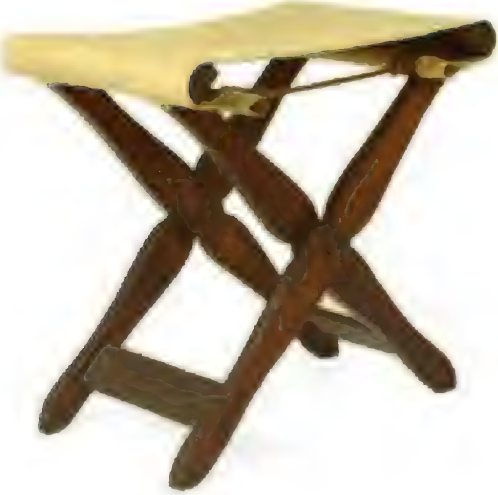
Unknown, children's chair (American),
can be converted into cart, 1900–1950
Inv. no. 20032097
Wood, varnished green; batting, canvas
62 × 97 × 54 × 62,5 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 547



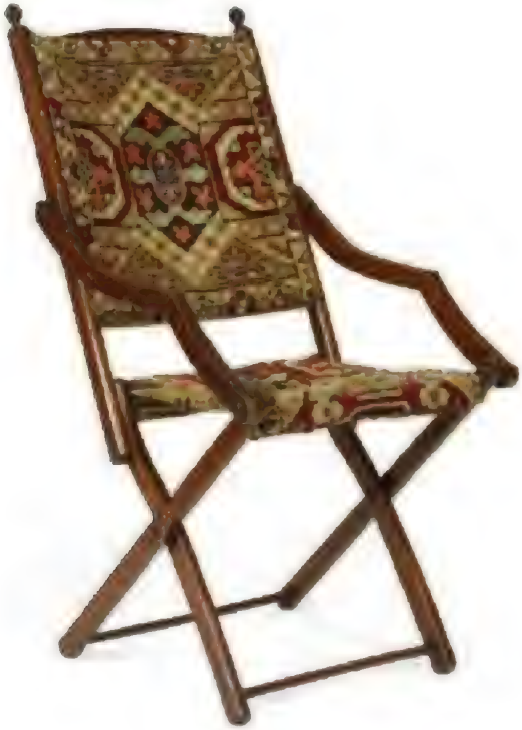
Unknown, children's chair with table leaf, can
be converted into rocking chair, 1920–1960 (?)
Inv. no. 20032150
Beech; cotton, transparent plastic
60.5 × 105 × 40 × 64 cm
Unknown
Lit.: H. de Jong: *Stoelen*, Delft 1980, p. 52



Unknown, stool, approx. 1820–1840
Inv. no. 20032030, 20032011
Oak, painted cream; split cane
31.5 × 54 × 58 × 38.5 cm
Unknown



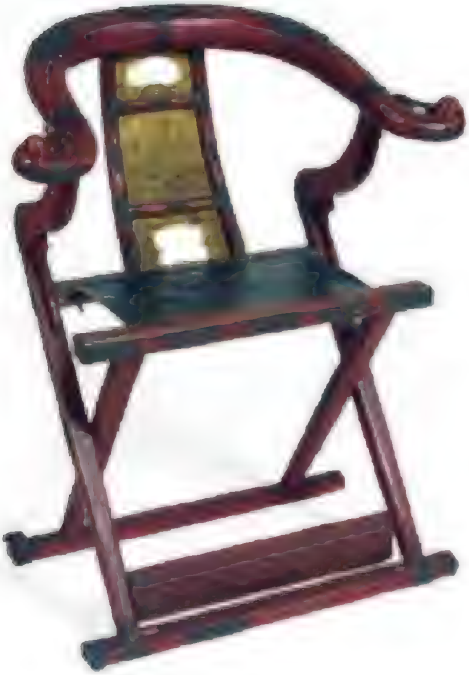
Unknown, folding stool, 1925–1950 (?)
Inv. no. 20032068
Wood, varnished mahogany brown; canvas
49.5 × 49.5 × 52 × 35.5 cm
Unknown



Unknown, folding chair, 1880–1900
Inv. no. 20032099
Wood; webbing, rug yarn
48 × 100 × 50 × 70.5 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 522-526

A folding chair with armrests. The frame consists of a dark-varnished wooden frame. The chair can be folded up thanks to hinged connections with iron bolts. The rug yarn for the back and seat is reinforced by some webbing.

Folding chairs were much used in the second half of the 19th century, both in the conservatory and as a part of the regular interior furniture. Their foldability was less important than the comfort and the original form. The folding chairs made by Dutch factories generally had textile strips as armrests. At the end of the 19th century, a variant of this type was introduced from Great Britain. The armrests of this version consisted of bent wood. These chairs were imported into the Netherlands or copied locally.



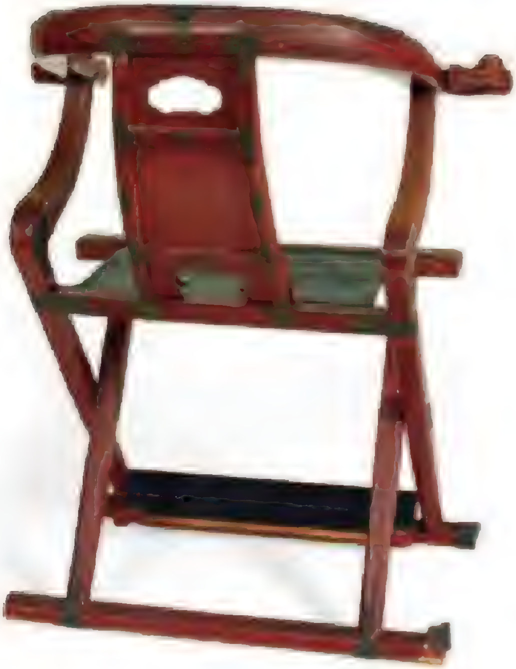
Unknown, folding chair, 1800–1900
Inv. no. 20032123
Wood
56.5 × 103 × 81.5 × 56 cm
Unknown, China
Lit.: N. Berliner & S. Handler, *Friends of the House. Furniture from China's Towns and Villages*, exhib.cat. Peabody Essex Museum, Salem (Mass.) 1996, p. 41; S. Handler, *Austere Luminosity of Chinese Classical Furniture*, Berkeley 2001, pp. 60-71

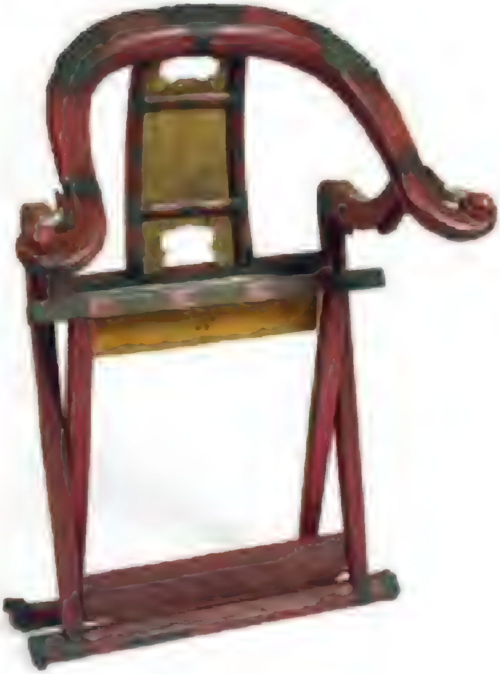
The wooden construction consists of two sections. The seat, which connects the two parts, is made of supple black leather, so that the two parts can be placed in either an open or a closed position. The hinges of metal pins are located under the seat. The armrest is a part of the rear part of the chair. The outer rods are formed in such a way that they can support the frontmost part of the armrest. The rearmost part of the armrest is supported by a wooden backrest, which has gilded parts that are decorated with simple carvings.

The chair does not possess a refined allure, but the practical design does have a distinctive beauty that is underlined by the simple decoration pattern. For example, the small bronze chiselled plates that decorate the chair posts are both ornamental and functional: they protect the parts that are susceptible to wear and tear. The chair is conspicuous due to the fact that it is relatively light, in contrast to what one might expect, due to the lightweight type of wood used.

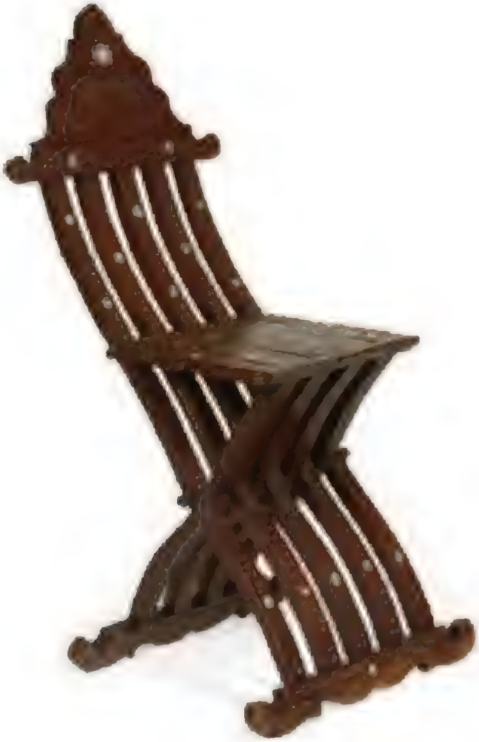
The typology of the *Jiaoyi*, the Chinese folding chair, originated from the folding stool in the 2nd century. In contrast to the Western variant, the user's legs hang over the side where the frame of the stool is situated. This simple object, which was initially regarded as a status symbol, later became a universal user object due to its practical applicability. During the Song Dynasty (960–1279 AD), when everyday life moved from the ground to chair height, the folding chair made its entrance. Actually, a backrest was simply added to the folding stool. Two centuries later, during the Ming Dynasty, the folding chair became a common item in China. The vulnerability of the chair, due to its folding mechanism and the fact that the chair was often moved from place to place, ensured that few chairs have survived.

The traditional Chinese folding chair is an intriguing object: the practical advantages of the chair, its mobility, and comfortable robustness in combination with a monumental beauty, transformed the chair into a status symbol. After all, China was an immense country and an emperor or landowner could have his servants transport the chair so that he appear before his subjects in a representative way. Judges too, who had to travel to the countryside to pass judgement, used the folding chair when they were on excursion. The chair gradually gained more symbolic significance down through the centuries. During meetings and audiences, the chair was used according to a strict hierarchical system. Portraits of ancestors often show deceased emperors, various dignitaries, and other people in a folding chair. Miniature folding chairs were also often placed in burial chambers, referring to the status of the deceased in this earthly life. On





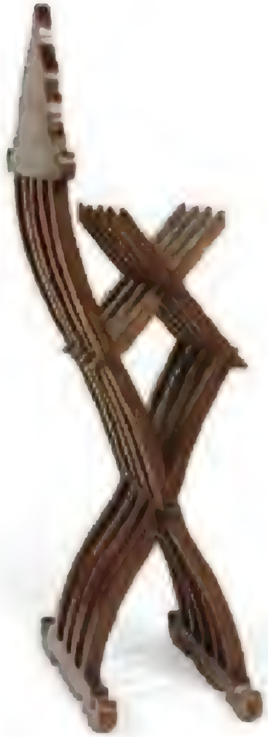
normal portraits too, people were often depicted sitting on a folding chair, frequently furnished with a cloth or animal skin. On the battlefield, folding chairs were covered with tiger skin to emphasize the military status and courage of the general. Emperors used the folding chair as a portable throne, in combination with matching footrests, when they were on a journey or when they were in the gardens of the palace. But folding chairs were also used in normal households to indicate a person's rank. The folding chair was only used by the most important people in any meeting. The status of the folding-chair user was often emphasized by the use of a footrest. As a result, the seat height could be higher, so that the user stood out above the others. In the folding chair depicted here, the footrest is installed between the front legs.

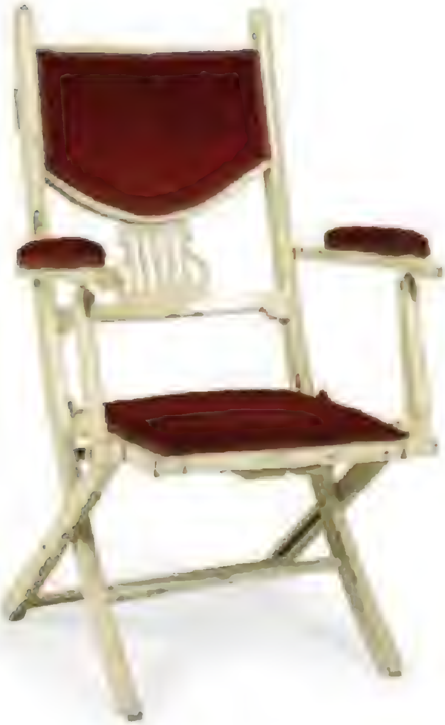


Unknown, folding chair, 1880–1900
Inv. no. 20032101
Walnut, mother-of-pearl
49.5 × 98 × 46 × 54 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 35; J. Huisman et al., *Honderd jaar wonen in Nederland*, Rotterdam 2000, p. 98

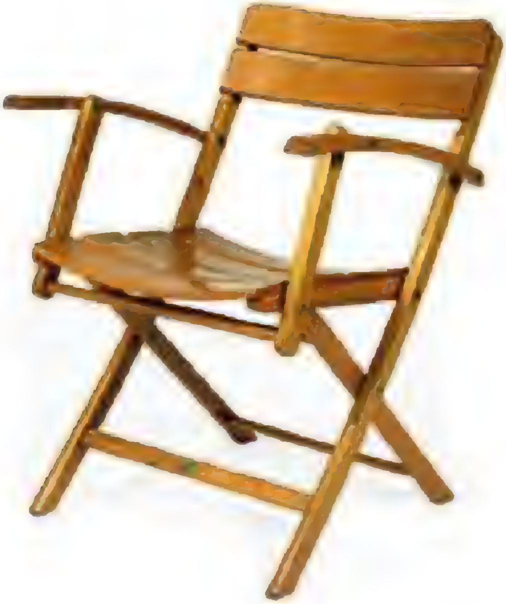
The chair consists of walnut slats, are mutually connected by means of basting pins, which fold together when the chair is collapsed. Five ongoing slats form the front legs and backrest, while four shorter slats form the rear brace and support the seat at the front. The slats are attached by means of tenon and mortise connections to skids at the bottom and to the back crossbar at the top. The seat also consists of slats. The entire chair is decorated with carving and inlaid with mother-of-pearl. The carving in the backrest combines geometrical patterns with motifs based on Arabic script.

Similarly decorated furniture was popular at the end of the 19th century as a part of interiors based on the Moorish style. Although the decoration is inspired by Orientalism, the model of this chair is European. As far back as the Middle Ages, the 'folding chair' or 'preaching chair', a small folding chair with an identical construction, was taken by congregation members to church, where there was no sitting furniture at that time.

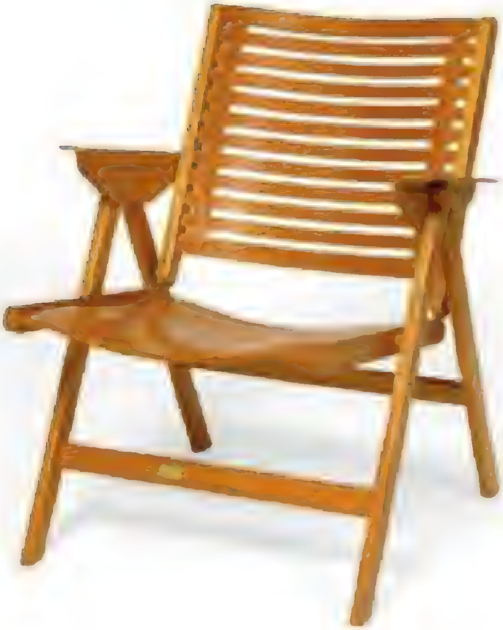




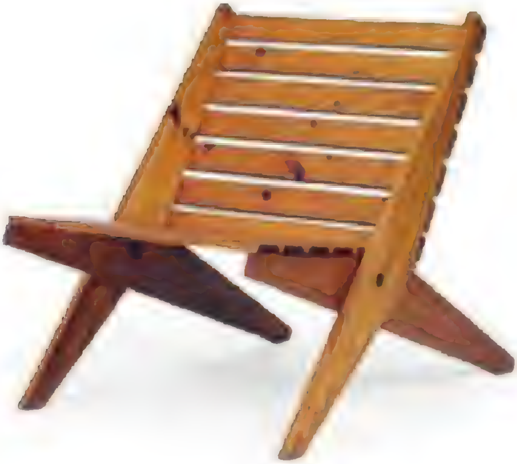
Unknown, folding chair with armrests, second half of the 19th century
Inv. no. 20032233
Wood, painted white; filling, mohair
41 × 97 × 58 × 60 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 526



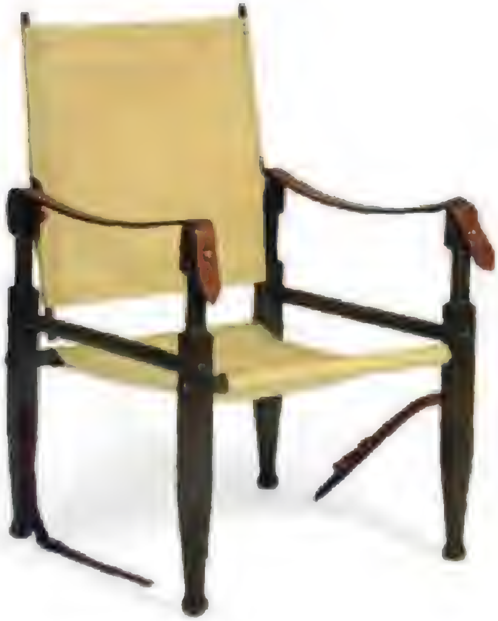
Unknown, folding chair with armrests, 1925–1974 (?)
Inv. no. 20032166
Beech, clear varnished
43.5 × 79.5 × 61.5 × 59 cm
Herlag, Deventer
Lit.: H. de Jong: *Stoelen*, Delft 1974, p. wood 03-00-10



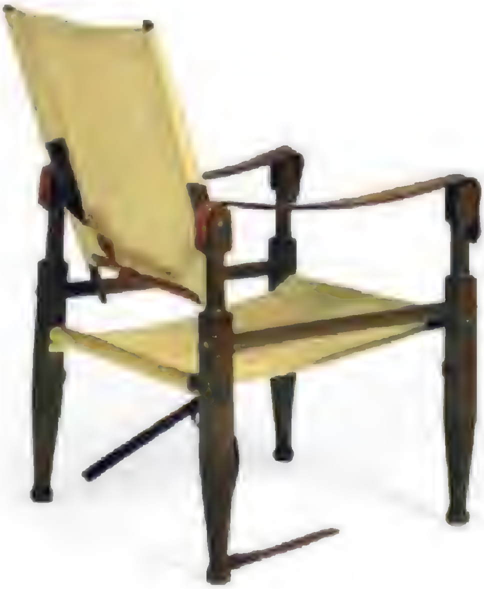
Niko Kralj, folding easy chair (*Rex*), 1952-1954
Inv. no. 20032003
beech; plywood
36 × 73 × 57 × 68 cm
Stol, Kamnik (Slovenia), model Rex
Lit.: H. de Jong (ed.), *Stoelen*, Delft 1974, p. hout 0-5-20; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 217



Unknown, folding chair, 1925–1975 (?)
Inv. no. 20032183
Pine
33.5 × 63 × 54 × 81.5 cm
Unknown

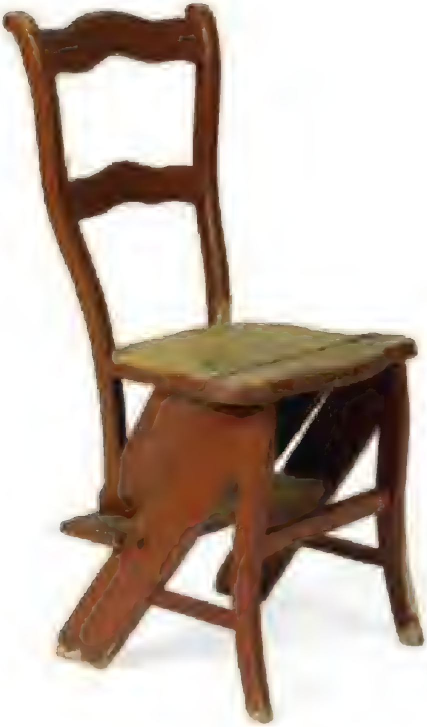


Unknown, folding chair with armrests (*Indian Chair*), after 1904
Inv. no. 20032142
Birchwood; canvas
37 × 87 × 54 × 60 cm
Maple & Co, London, model 1761N
Lit.: D.E. Ostergard (ed.), *Bent Wood and Metal Furniture 1850–1946*, exhib. cat. American Federation of Arts, New York 1987, p. 281

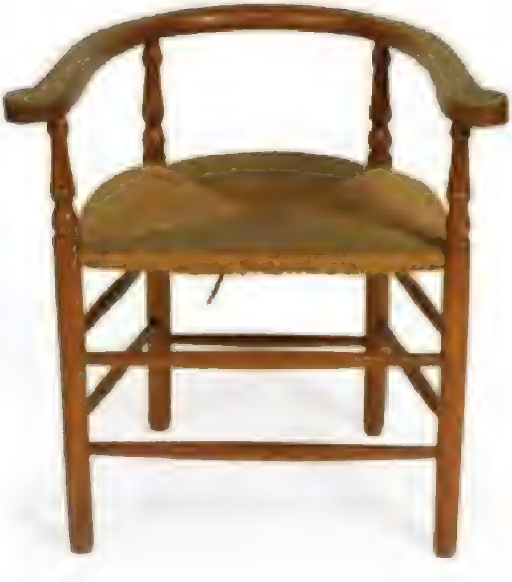


The construction of this chair with armrests consists of horizontal and vertical round wooden components. The ends of the crossbars fit into notches in the posts. These joints are not glued, but the components are loose and can be mutually disconnected without difficulty. Two wide leather belts that function as armrests serve to hold the construction together. Small leather strips on the underside of the chair also have the same purpose. The seat and the adjustable backrest are made of canvas that fits over the wooden parts. The construction gives the chair the exceptional feature that the legs adapt to irregularities in the ground surface.

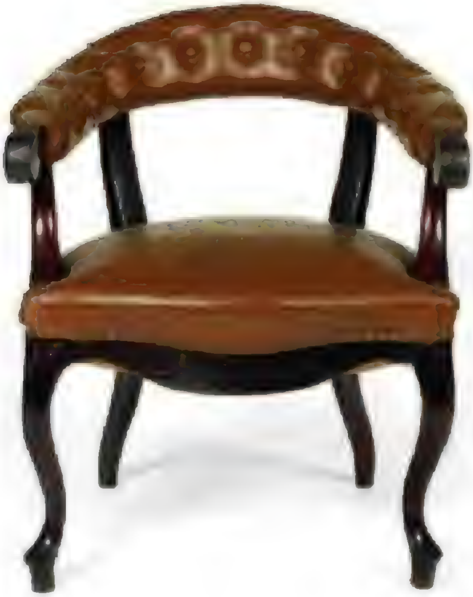
Due to their functionality and commercial success, the furniture produced by the British firm of Maple & Co was admired by modernist designers such as Marcel Breuer and Le Corbusier. Particularly the so-called *Indian Chair* was greatly appreciated due to its minimalist design. This chair, which was produced by the Maple company from 1904 onward, was a slightly altered version of the *Roorkhee Campaign Chair*, a chair that was much used by British officers in India in the 19th century, due to the fact that it was sectional, lightweight, and comfortable.



Unknown, chair, convertible into library steps, approx. 1825–1875
Inv. no. 20032155
Pine
46.5 × 95 × 41 × 45 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 714, 715

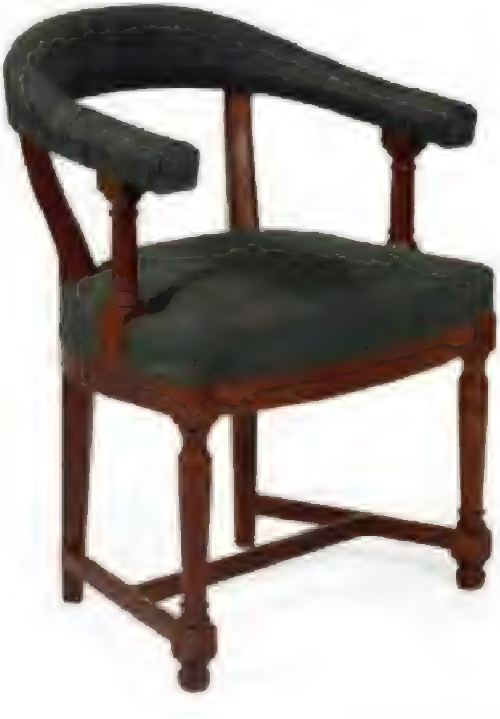


Unknown, chair with armrests, approx. 1900 (?)
Inv. no. 20032219
beech and elm; bulrush
45.5 × 68.5 × 64.5 × 53 cm
Unknown



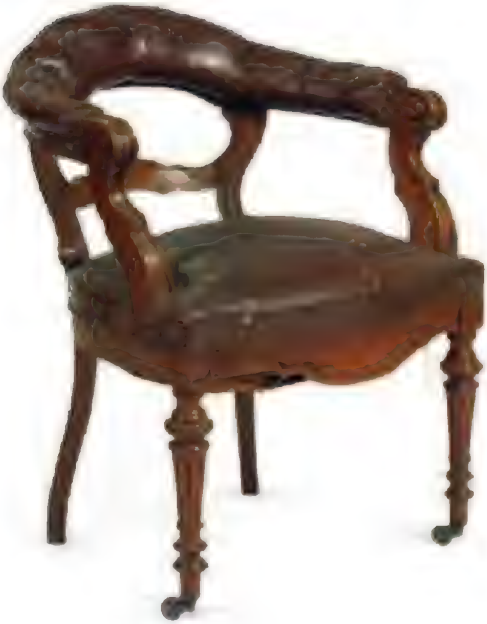
Unknown, office chair with armrests, 1850–1900
Inv. no. 20032111

Wood; webbing, high inner springs, filling, canvas, leather
48 × 79 × 65 × 64 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 538, 539

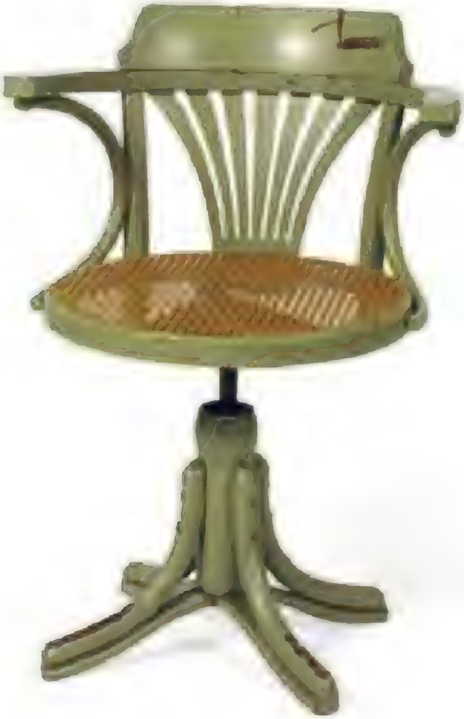


Unknown, office chair with armrests, 1850–1900
Inv. no. 20032174

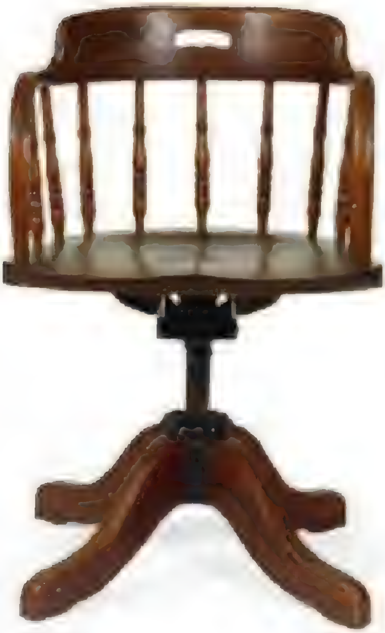
Wood; webbing, high inner springs, filling, 'neutral horsehair' fabric
52 × 82 × 60 × 54 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 538, 539



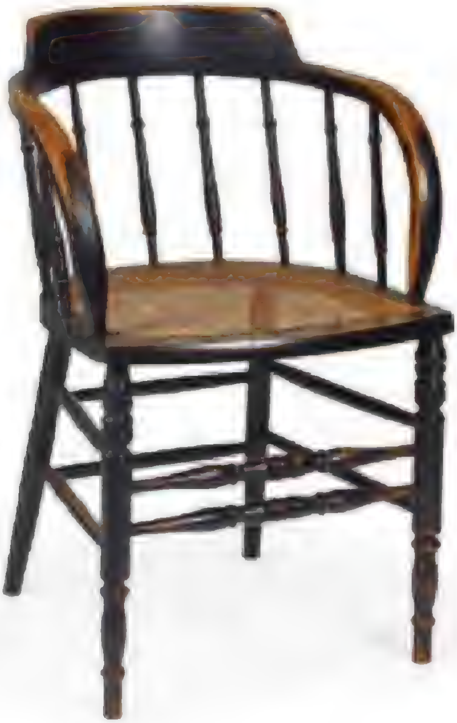
Unknown, office chair with armrests on wheels, 1850–1900
Inv. no. 20032110
Wood; webbing, high inner springs, filling, dark-brown canvas
53 × 86 × 69 × 62 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 538, 539



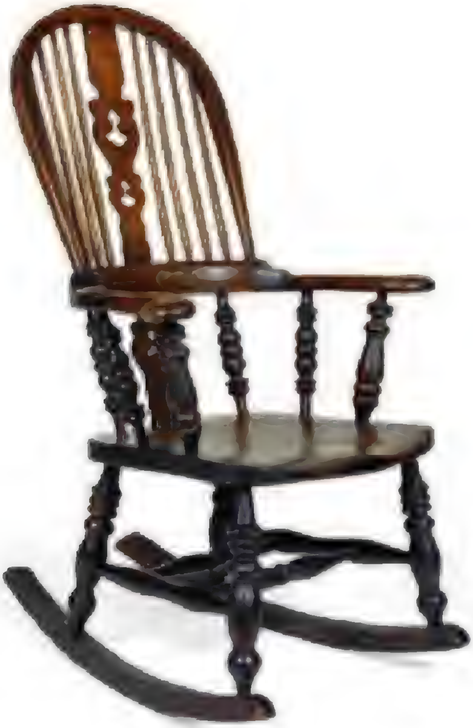
Unknown, office chair (American swivel chair), adjustable in height, 1875–1900
Inv. no. 20032086
Wood, painted light-grey, iron; split cane
49 × 84 × 59 × 56.5 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 535



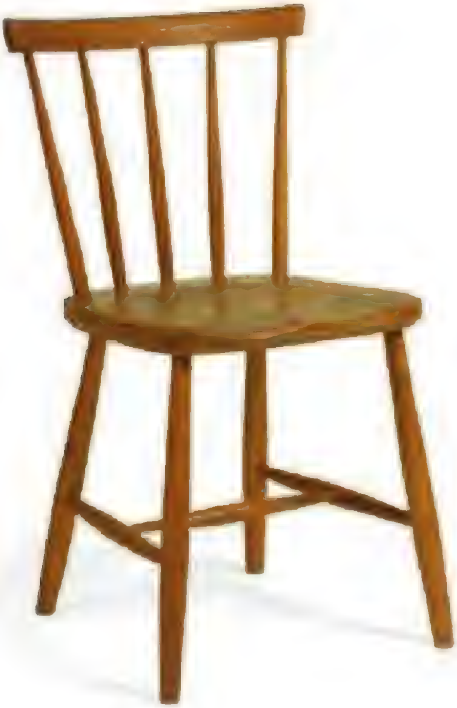
Unknown, office chair (American), adjustable in height, with tiltable seat, 1855–1900
Inv. no. 20032211
Oak, iron
52 × 86 × 55 × 53.5 cm
Heywood Brothers and Wakefield Company, Massachusetts
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 535



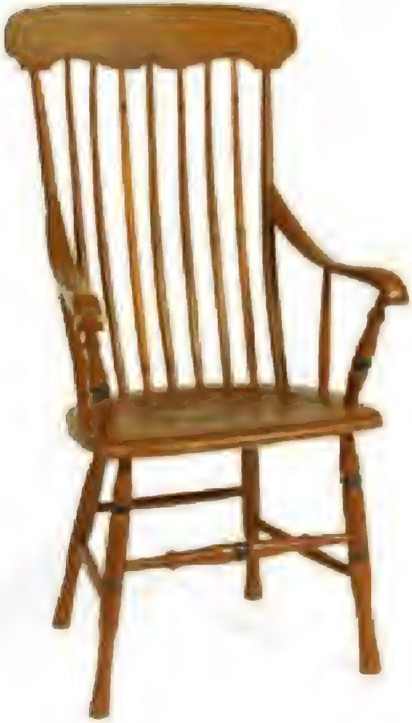
Unknown, chair with armrests, approx. 1880
Inv. no. 20032220, 20032221
Elm, painted black; split cane
47 × 80.5 × 53 × 52.5 cm
Unknown



Unknown, rocking chair with armrests (Windsor Rocker), 1850-1900
Inv. no. 20032093
Elm or beech
41 × 107 × 64 × 74 cm
Unknown, possibly English, or from Oirschot, the Netherlands
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 207; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 526, 527



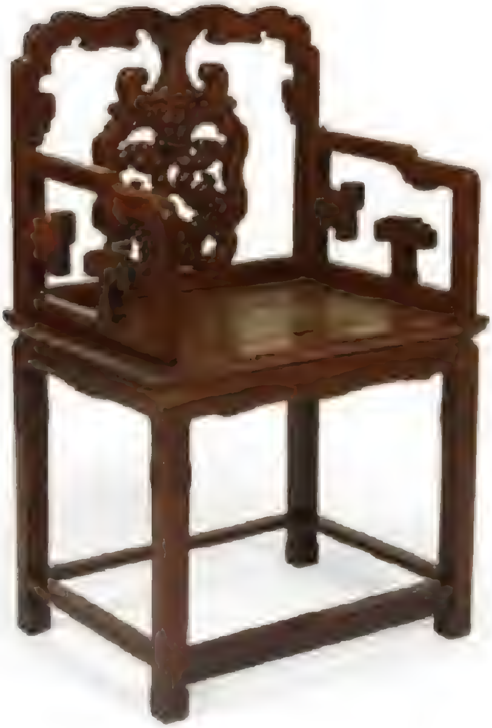
Unknown, chair (Oirschot chair), 1930–1960 (?)
Inv. no. 20032120, 20032158
Beech
46 × 82 × 47 × 45.5 cm
Vlemming & Erven, Oirschot
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 52, 53



Unknown, chair (*American* or *Oirschotse Chair*), 1860 until the beginning of the 20th century
Inv. no. 20032095
Elm
50 × 120 × 59 × 54 cm
Vlemming en Erven, Oirschot
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 52-53

The frame of this chair consists of posts and crossbars of elm, which are connected by means of tenon and mortise joints. The backrest and the armrests are also elm. The chair has been 'wooded', in other words, it has been varnished in such a way that it looks like the woodgrain is visible.

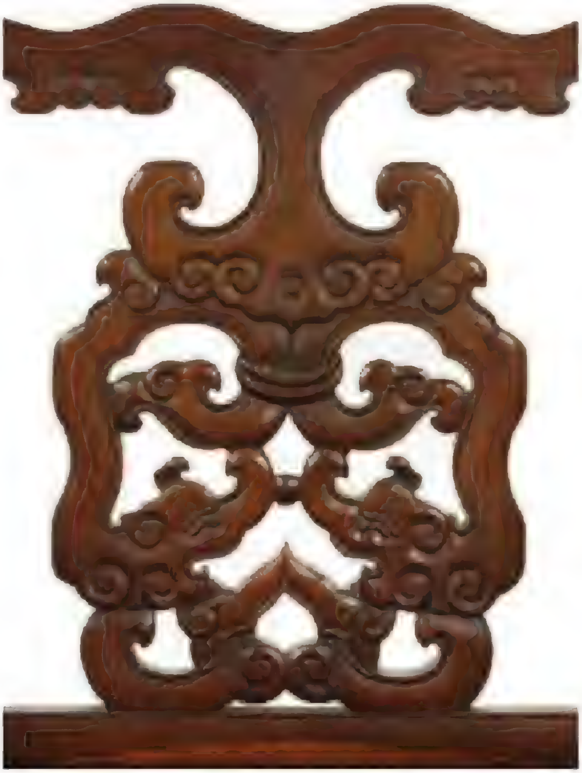
This type of chair was introduced to the Netherlands by the C.H. Teurlincx and Meijers Company in Oirschot in 1860. It was an imitation of American chairs with modelled seats and backrest posts slotted into the seat. The shaped seat and the sloping backrest gave the chair more sitting comfort than the traditional knob chair from Brabant, while the splayed legs also increased the stability. Despite the slightly higher price, the chair was very popular due to its robustness and the fact that the seat did not have to be replaced regularly. The great demand led to several factories being established in Oirschot to produce such chairs, probably including the Vlemming en Erven Company, whose name is stamped on this chair. This type of chair, which was initially known as the *American Chair*, soon became known as the *Oirschotse Chair*.

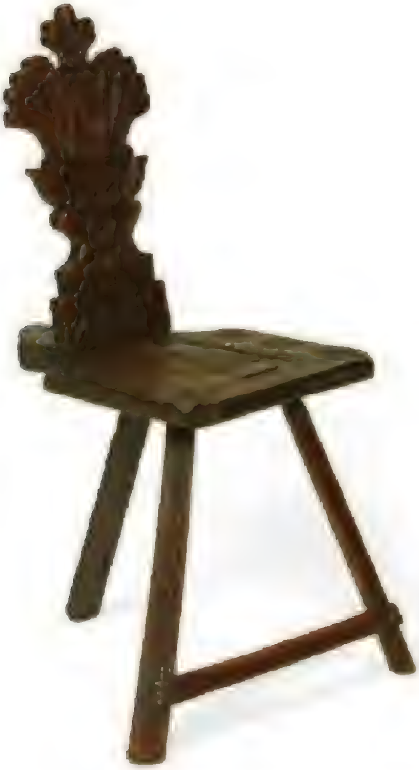


Unknown, chair with armrests, end of the 19th century
Inv. no. 20032212
Ironwood
51.5 × 79 × 57 × 45 cm
Unknown

This chair with armrests has a frame whose components are connected by means of mitre and tenon and mortise joints. The construction seems to consist of a subframe, on which the seat has been placed, to which the back and the armrests have then been attached. The chair is made of solid, waxed ironwood, with the exception of the inserted seat, which is made of plywood. The decoration consists of carving. The rounded sides of the carving and the slightly convex front sides are striking features.

The chair probably comes from China, but it is not easy to date the object. The way in which the chair has been implemented is 18th century, but the plywood seat suggests a later date.

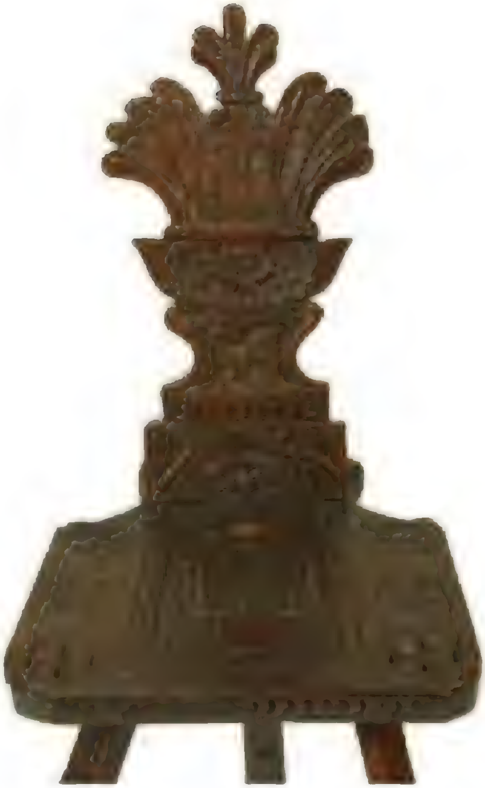


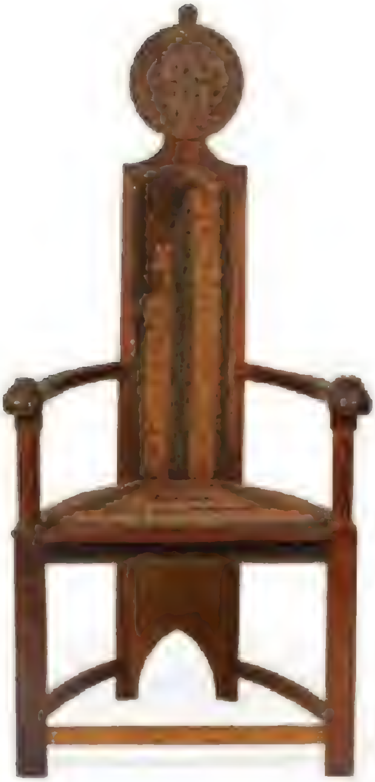


Unknown, three-legged stool, 19th century
Inv. no. 20032109
Walnut
46.5 × 95 × 83 × 56 cm
Unknown

A walnut stool, consisting of a solid wooden seat and three slanting legs that are attached to the seat by means of a wooden peg in the seat. The front rung is fixed to the front legs by means split iron pins. The slanting backrest is inserted in a slit in the seat. The backrest and the rear leg ought to be connected, but this link is absent here, as is the rung between the rear leg and the front legs. The seat and the back have been sawn into the required shape and decorated with relief carving. The legs have longitudinal grooves.

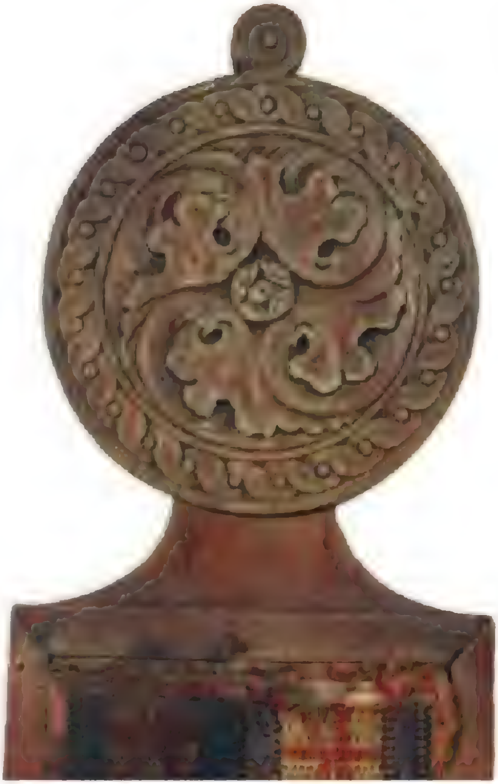
The stool has a striking amount of iconographic representation in the carving for such as simple piece of furniture. The Passion of Christ is presented in both the backrest and the seat. The cut along the grain of the wood, which has been applied to the legs, is typical of rural furniture. The combination of a very simple type of chair and abundant decoration indicates that he model originated in the 19th century. This chair probably came from Tyrol or Switzerland.

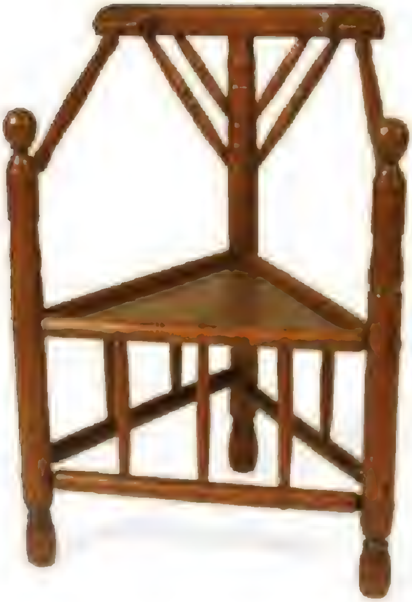




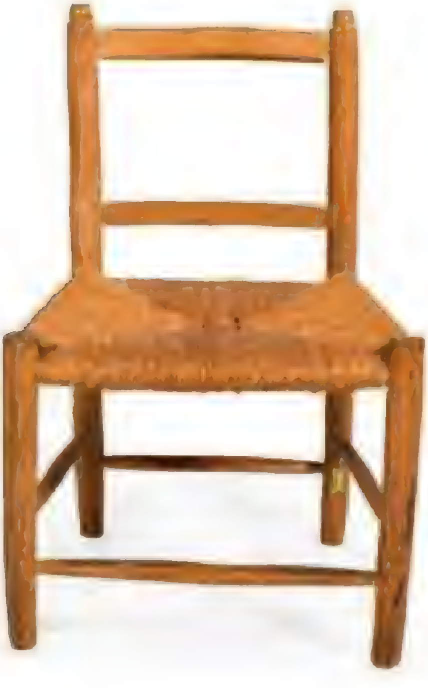
Unknown, chair with armrests, 1900–1910
Inv. no. 20032173
Oak; filling, kilim belts
47 × 144 × 65.5 × 62.5 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 49

This chair with armrests is a combination of a frame, assembled by means of tenon and mortise connections, and an oak plate construction that has been waxed. The upper part of the backrest displays relief carving and the rounded armrests culminate in a carved head at the extremities. The wooden seat and backrest contain some filling and are upholstered with kilim belts sewn together. This type of chair originated in around 1550 as a lighter and more comfortable alternative to the chest seat. The so-called 'talking chair', or 'caquetoir', was specifically intended for women and the seat is wider at the front than at the back to allow space for their skirts. The example in the collection displays an eclectic style: detailed carving with a Celtic or Scandinavian motif is combined with rather roughly hewn heads on the armrests and the kilim belts of the upholstery. The chair has a very weak construction, many loose joints, evidence of repairs, and screws. The lower rung at the front is not original and the upholstery is dirty and partly loose.

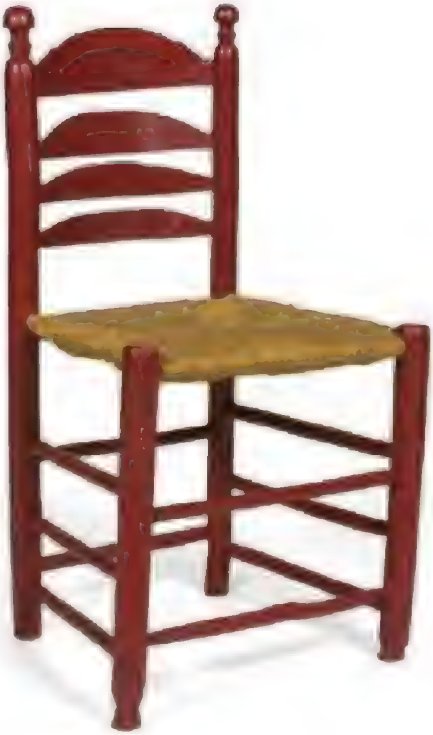




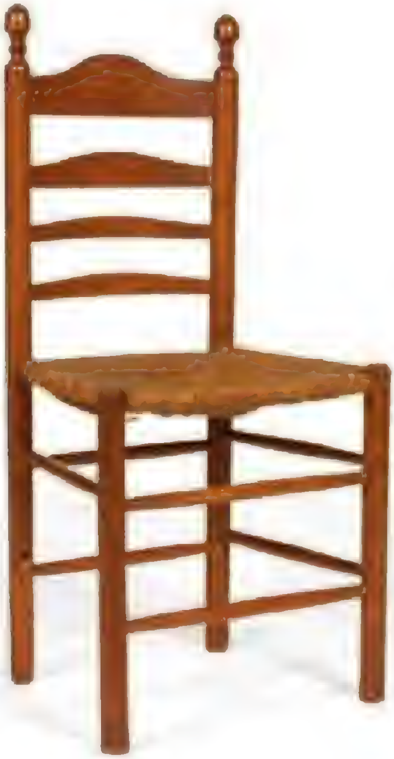
Unknown, chair with armrests (three-legged stool), mid-13th century type, object from 19th century
Inv. no. 20032059
Oak
43 × 85 × 59 × 47.5 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 29, 34



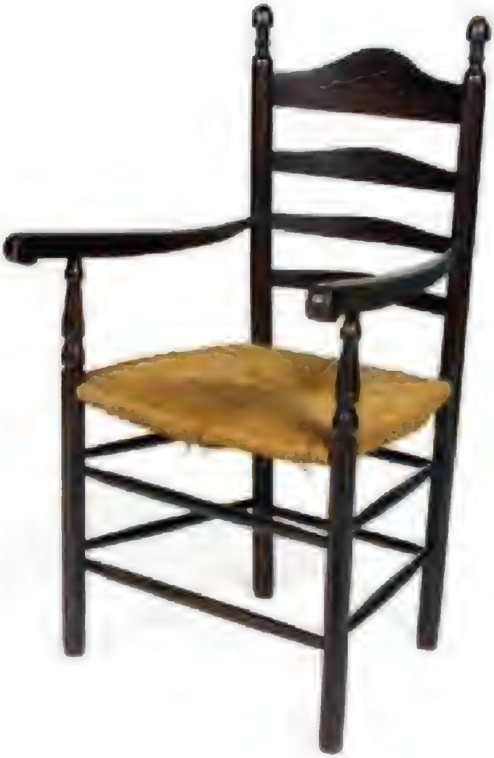
Unknown, chair, 19th century (?)
Inv. no. 20032235
Wood (stripped branch); bulrush
33 × 65 × 43 × 38 cm
Unknown
Lit.: H. de Jong, *Stoelen*, Delft 1974, p. wood 04-08



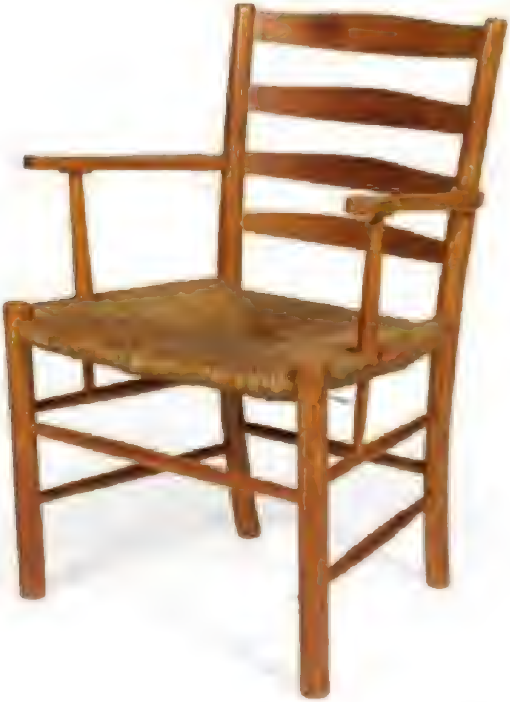
Unknown, chair (Brabant knob chair), type second half 17th century, object approx. 1900 (?)
Inv. no. 20032127
Wood (stripped branch), painted terra-coloured; bulrush
46 × 87.5 × 47 × 43 cm
Unknown
Lit.: H. de Jong, *Stoelen*, Delft 1974, p. wood 04-11; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 70, 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 50, 51



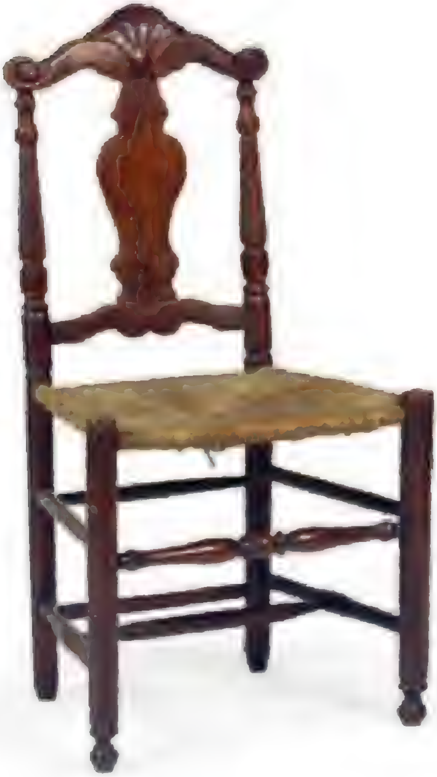
Unknown, chair (Brabant knob chair), type second half 17th century, object approx. 1900 (?)
Inv. no. 20032216
Wood; bulrush
45 × 94.5 × 45 × 39 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 70, 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 50, 51



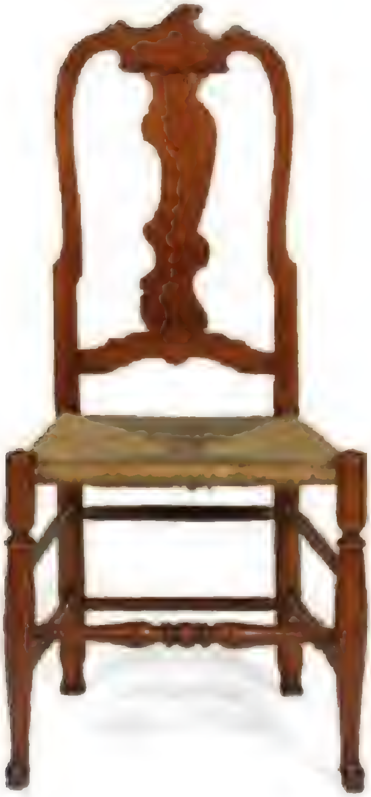
Unknown, chair with armrests (Brabant knob chair), type second half 17th century, object approx. 1900 (?)
Inv. no. 20032162
Oak; bulrush
45 × 103 × 57 × 57 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 70, 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 50, 51



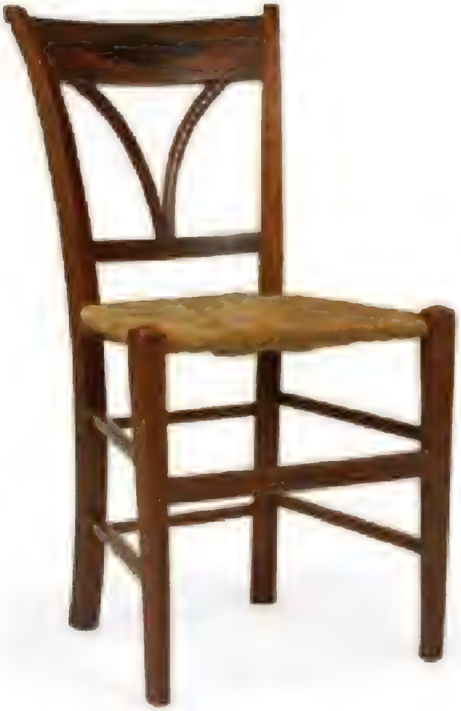
Unknown, chair with armrests, approx. 1900 (?)
Inv. no. 20032139
Wood; bulrush
43 × 86 × 62 × 56 cm
Unknown



Unknown, chair, mid-18th century style, object from 19th century
Inv. no. 20032222
Fruit-tree wood, elm, waxed; bulrush
44 × 99.5 × 49.5 × 43 cm
Unknown, the Netherlands or England
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 146



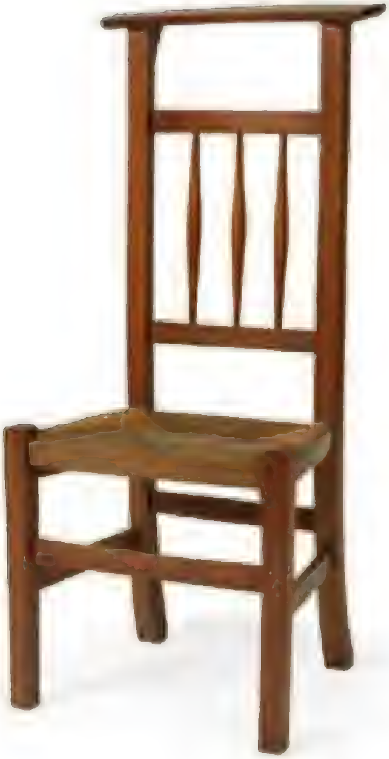
Unknown, chair, back approx. 1760-1780 (Queen Anne), legs 19th century (?)
Inv. no. 20032104
Walnut, waxed; bulrush
47 × 110 × 49.5 × 44 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 146



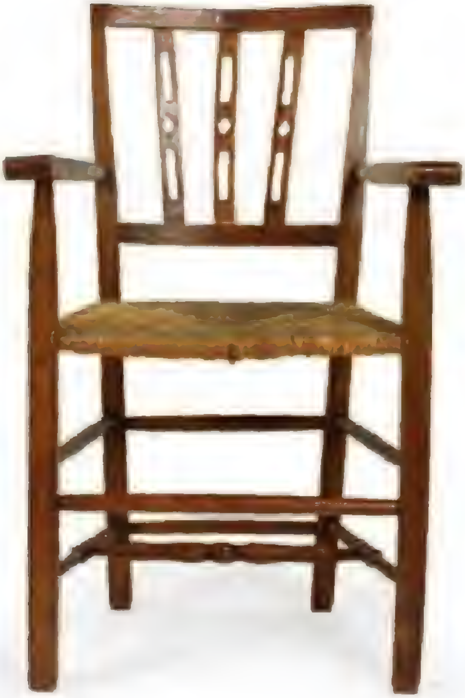
Unknown, chair (*Ear of Corn*), 1780–1850
Inv. no. 20032190
Elm; bulrush
50 × 90 × 49.5 × 50 cm
Unknown
Lit.: A.C.H. Hofstede, *Nederlandse meubelen. Van barok tot biedermeier, 1700–1830*, Zwolle 2004, p. 203

This chair is made of waxed elm. The frame has been constructed by means of tenon and mortise joints, and the curved sections have been sawn to shape. The upper crossbar of the backrest is decorated with an inlaid thin bronze strip and decorative nails, while the diamond shape in the middle is black-varnished. The backposts culminate in a scroll at the top. The two curved back posts are decorated with smooth carving and grooves have been milled into the legs and front rung. The seat consists of a bulrush mat.

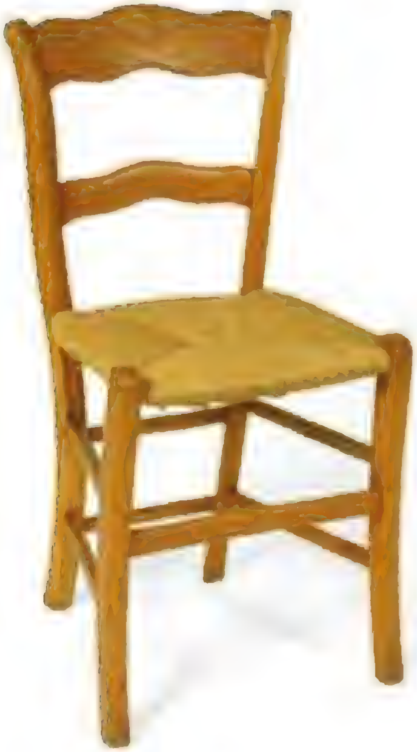
The so-called *Ear of Corn* is a type of chair that was abundantly produced from the end of the 18th century to around 1820 or 1830. The chair owes its name to the wooden back components in which a stylized ear of corn is always shown. The model in the collection is a simple one, although it did require a surprising amount of labour for a cheap chair. This is probably a rural version of the *Ear of Corn*, and straightforward variants like this one were produced until around 1850.



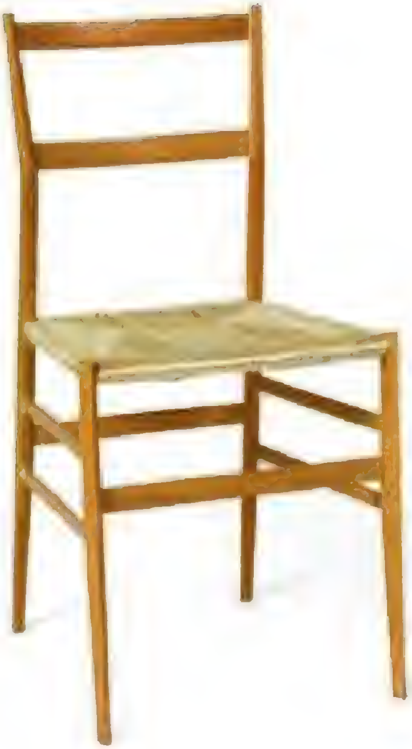
Unknown, chair (*prie-dieu*), 19th century
Inv. no. 20032217
Beech, clear varnished; bulrush
36.5 × 93.5 × 40.5 × 42.5 cm
Unknown
Lit.: H. de Jong: *Stoelen*, Delft 1974, p. wood 04-10



Unknown, chair with armrests, 19th century (assembled item?)
Inv. no. 20032218
Elm, waxed; bulrush
49 × 93 × 60 × 61.5 cm
Unknown



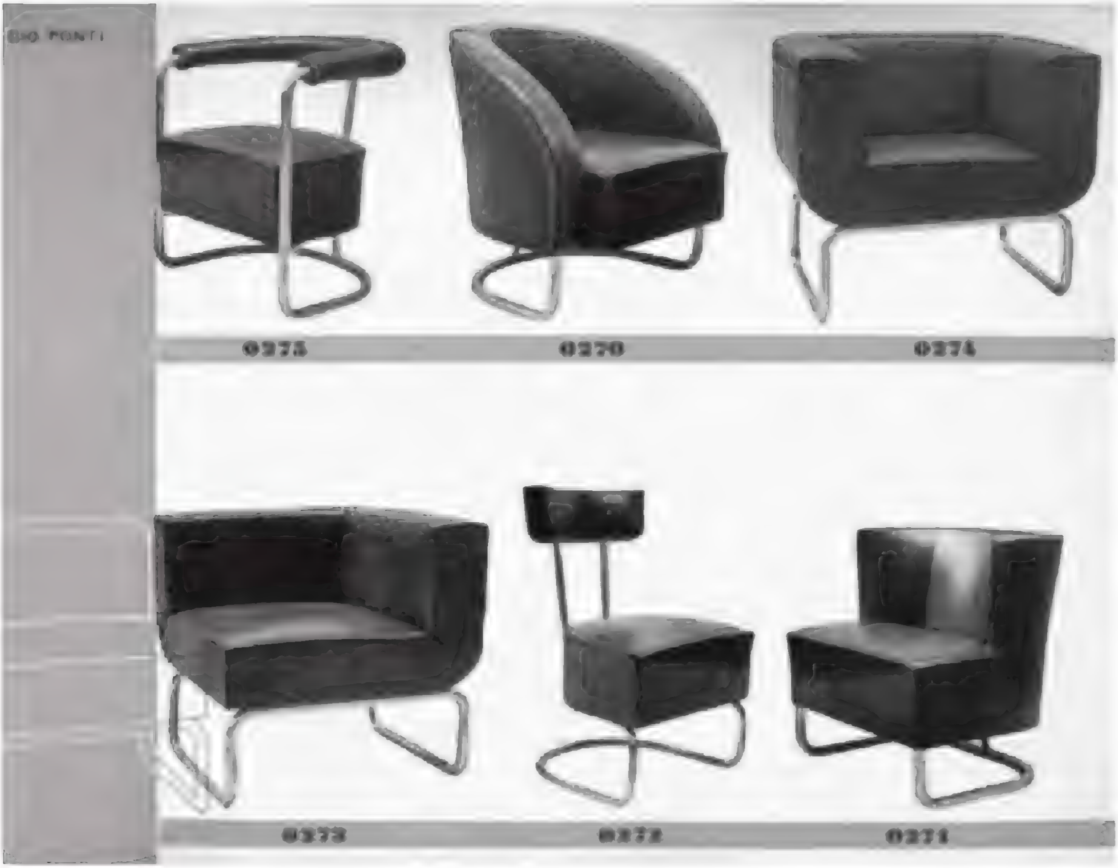
Unknown, chair (Culemborg chair), 18th century type, object from 1850–1920 (?)
Inv. no. 20032092
Elm, waxed; bulrush
50.5 × 91 × 44.5 × 42.5 cm
Unknown, probably Culemborg
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 70, 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 51, 52



Gio Ponti, chair (*Superleggera*), design 1951-1957, object after 1957
Inv. no. 20032037
Ash, turned cellophane
45 × 82 × 40.5 × 44.5 cm
Cassina, Meda, model 699 Superleggera (from 1957 onward)
Lit.: A. Bangert, *Italienisches Möbeldesign. Klassiker von 1945 bis 1985*, Munich 1985, p. 82; L.L. Ponti, *Gio Ponti. The Complete Work 1923–1978*, Cambridge (Mass.) 1990, pp. 175-175; A. Kjelberg, *Le Mobilier de XXe Siècle*, Paris 1994, pp. 489-499; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 124-125; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 349

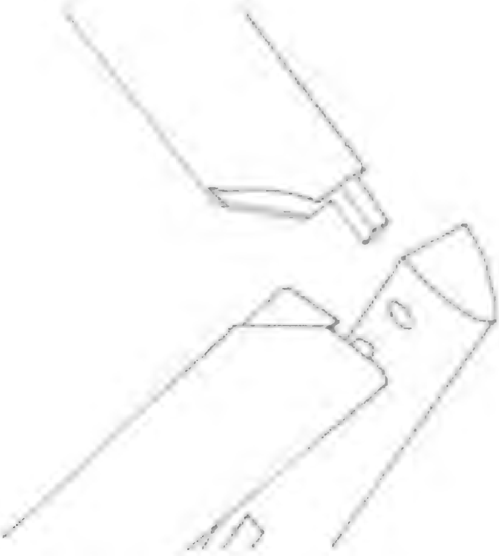
Chair made of light ash wood with a seat of turned cellophane that is matted, like bulrush. The joints consist of glued tenon and mortise connections. A striking feature is the slender design of the wooden parts that made it necessary to reconsider the traditional connecting details. The design was inspired by the traditional *Chiavari Chair* that had been designed in the fishing village of Chiavari, near Milan, since the 19th century. The elegant chairs were greatly admired in Europe and formed the basis of a new generation of 'light' furniture that occupied every salon in the 19th century. Ponti adapted the basic shape of the chair by introducing a crook in the backrest and by reducing the components to their bare essentials. This process led to the creation of the 'leggera' chair in 1952. The legs are tapered so that material can be saved. The design of this chair was refined in subsequent years, ultimately forming the *Superleggera* (super-light) chair in 1957.

The most important improvement was the triangular profile of the vertical parts so that these contain even less material. Ingeniously detailed construction joints made it possible to connect the components in an extremely strong way. The chair only weighs 1.7 kilo. In order to reduce the weight of the chair even further, the tradition rattan seat was replaced by turned cellophane. The story goes that, in order to

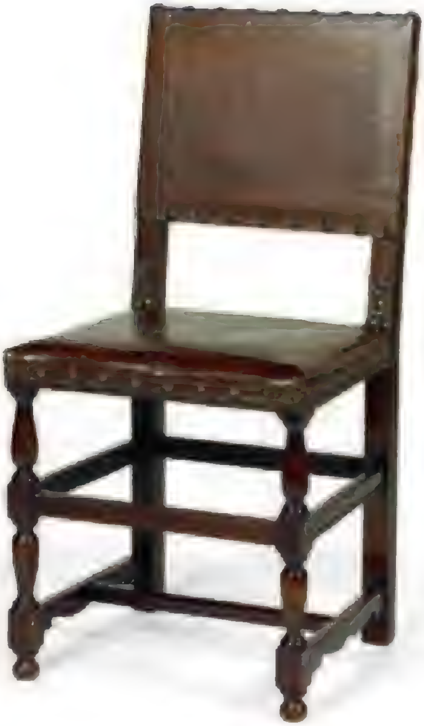


Beltrami brochure with chairs by Ponti, 1934. Source: O.M. archives.

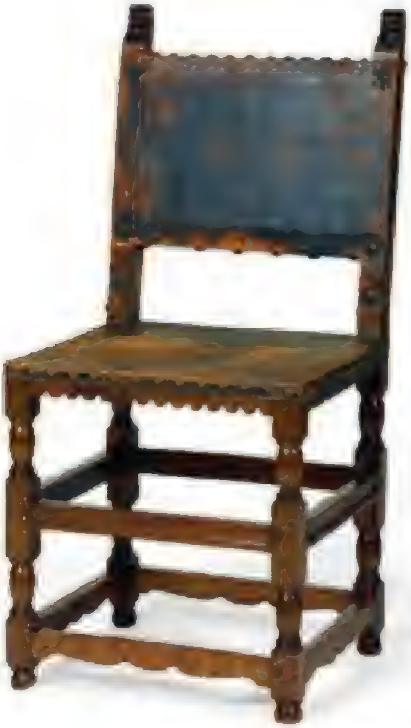
demonstrate the strength of the chair, Ponti threw the chair on to the street from a height of four storeys, upon which it bounced a couple of times without breaking. This lightweight chair contrasts with Ponti's pre-war designs for the Beltrami company, which were extremely robust.



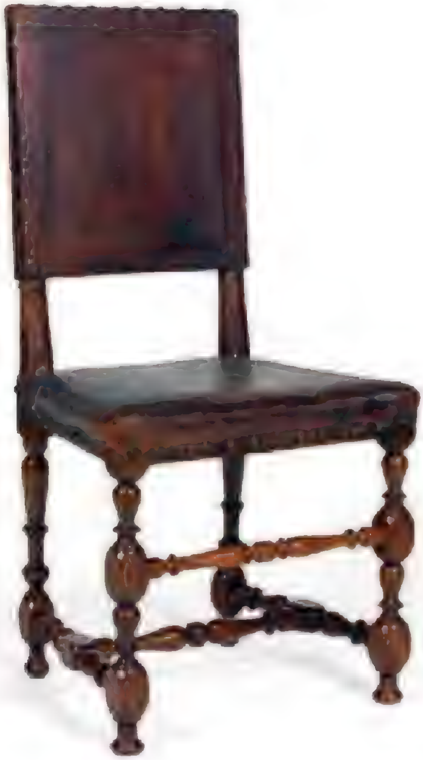
Detail of the joint of the seat rods and the front leg.



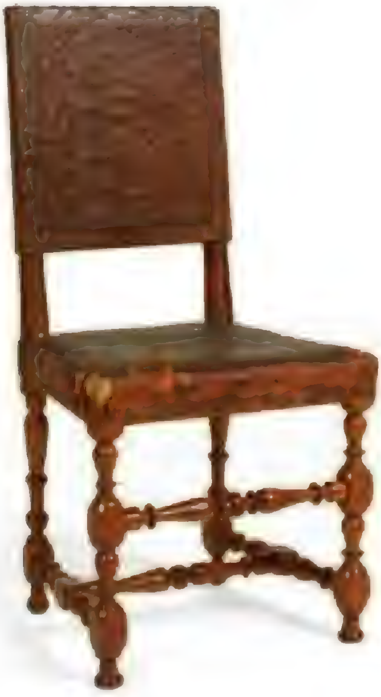
Unknown, chair (Renaissance genre), 19th century (?)
Inv. no. 20032225, 20032226
Oak, dark-varnished; webbing, jute, filling, leather
49 × 96 × 46.5 × 48.5 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, pp. 74-75; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 70



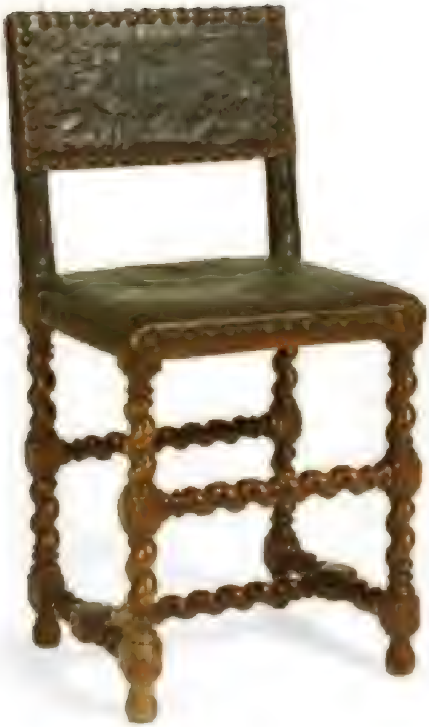
Unknown, chair (Renaissance genre), 19th century (?)
Inv.no: 20032227, 20070028
Oak, waxed; jute, leather
50 × 98 × 46 × 45 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, pp. 74-75; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 70



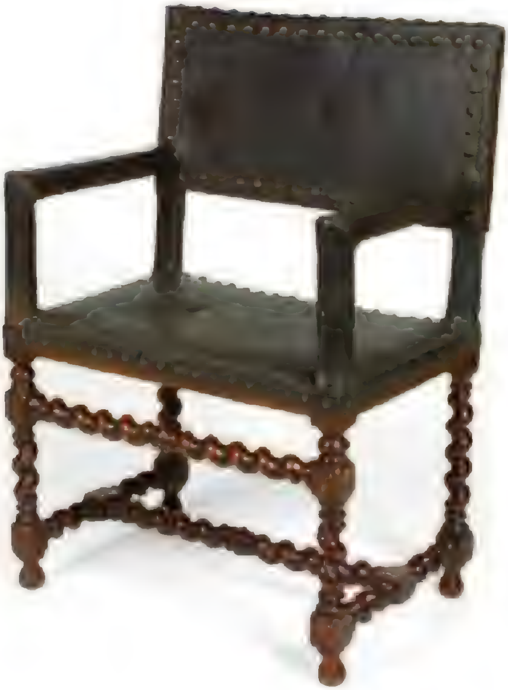
Unknown, chair, 17th century (?)
Inv. no. 20032230
Walnut, waxed; jute, filling, leather
47 × 101 × 49 × 46.5 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, pp. 74-75; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 70



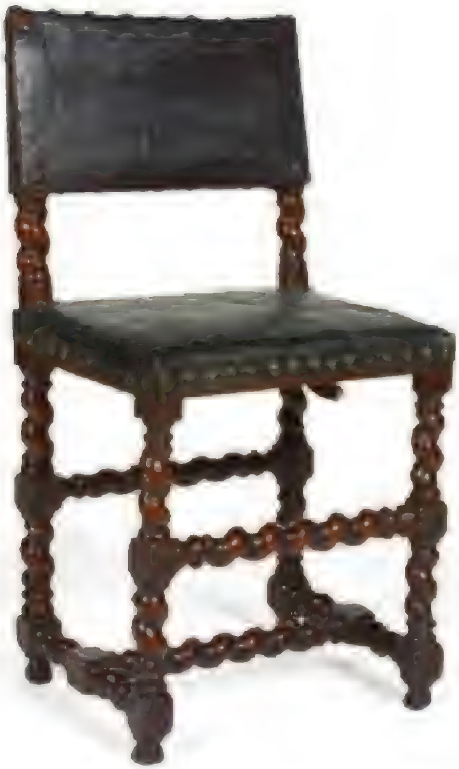
Unknown, chair (Renaissance genre), 19th century
Inv. no. 20032088
Pearwood, waxed; jute, filling, leather
48.5 × 101 × 50 × 45.5 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, pp. 74-75; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 70



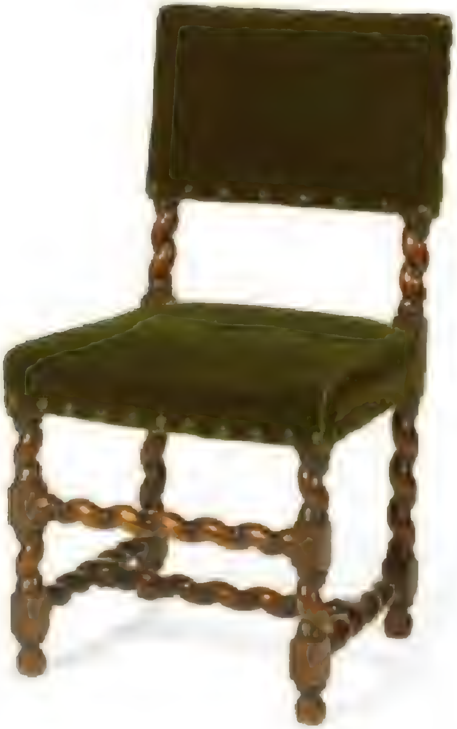
Unknown, chair, approx. 1700 (?)
Inv. no. 20032090
Walnut; hand-woven webbing, filling, leather
56 × 93.5 × 47 × 43 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 74



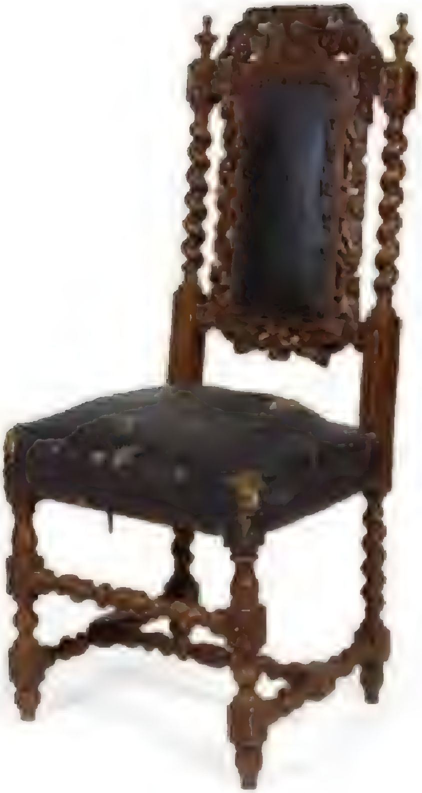
Unknown, chair with armrests, 1625–1675 (?)
Inv. no. 20032103
Wood, waxed; webbing, jute, filling, leather
46.5 × 95 × 63 × 48 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 70; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 74



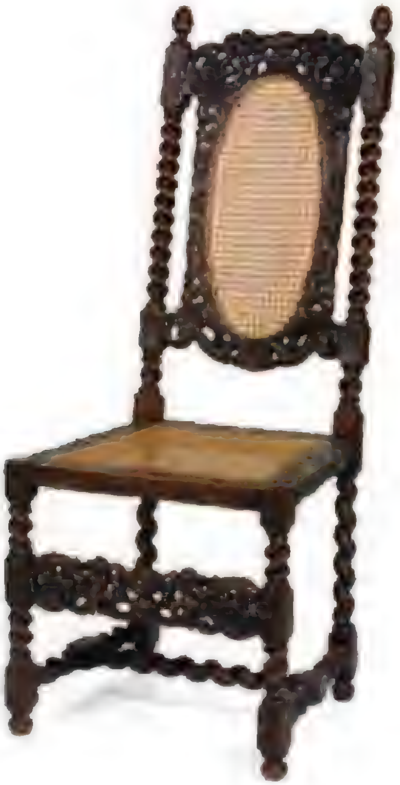
Unknown, chair (Renaissance genre), 19th century (?)
Inv. no. 20032106
Wood, waxed; webbing, jute, filling, leather
53 × 95 × 47 × 41 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 74



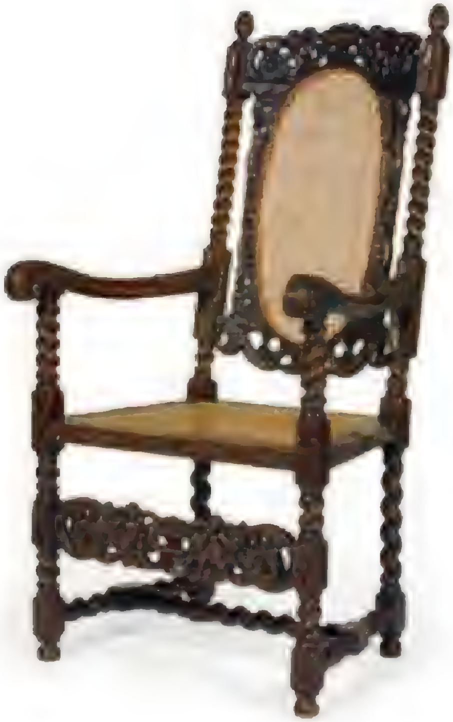
Unknown, chair (Renaissance genre), 19th century
Inv. no. 20032028, 20070029
Wood; webbing, jute, filling, velour
47.5 × 93 × 49 × 49.5 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 71; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 74



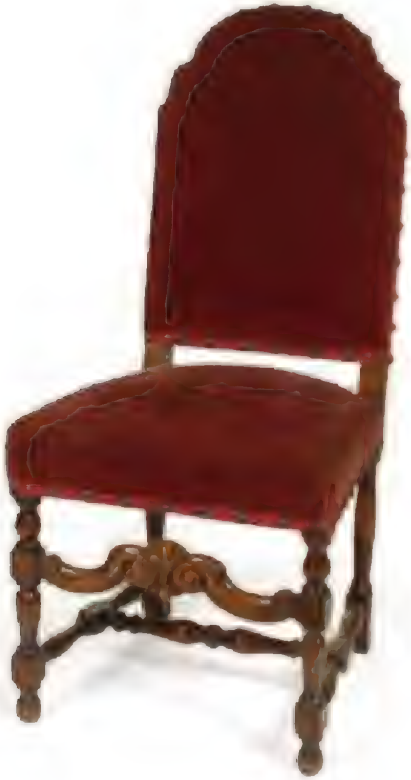
Unknown, chair (Baroque genre), approx. 1860-1880
Inv. no. 20032238
Oak, waxed; softboard, hay, oilcloth
47 × 109 × 41.5 × 48.5 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Gauge 1918, p. 77; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 105



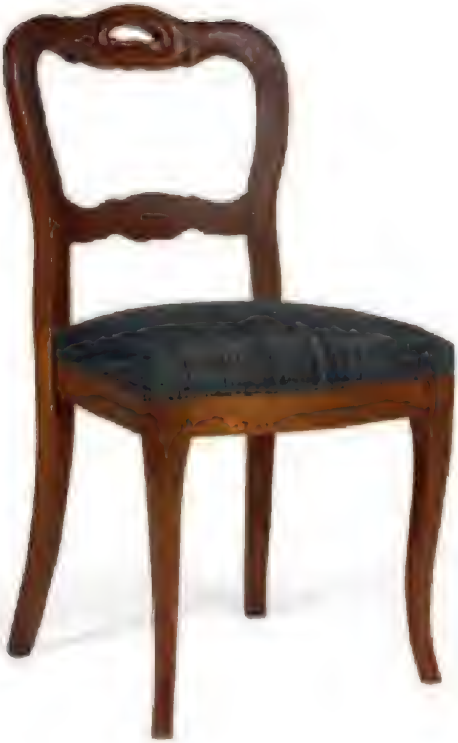
Unknown, chair (baroque genre), approx. 1860-1880
Inv. no. 20032214
Oak, waxed; split cane
46 × 115.5 × 48 × 59 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, p. 77; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 97



Unknown, chair with armrests (baroque genre), approx. 1860–1880
Inv. no. 20032215
Oak, waxed; split cane
45.5 × 123 × 63 × 69 cm
Unknown
Lit.: K. Sluyterman, *Huisraad en Binnenhuis in Nederland in vroegere eeuwen*, The Hague 1918, p. 77; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 97



Unknown, chair, end 19th century
Inv. no. 20032223
Oak, varnished dark brown; seat: webbing, vertical springs, jute, wadding, cotton, velour; backrest: sheet of wood, horsehair, cotton, velour
52 × 110 × 51 × 58 cm
Unknown

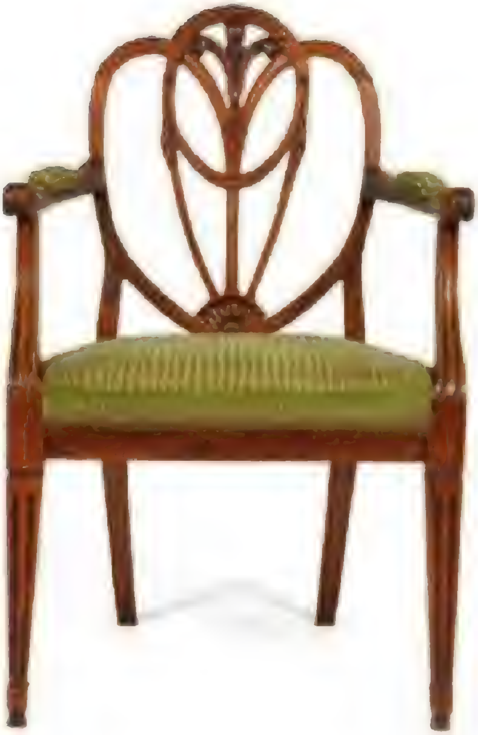


Matthieu & Willem Horrix, chair, approx. 1860–1880
Inv. no. 20032232
Oak; webbing, filling, horsehair
47 × 88 × 45 × 38.5 cm
Anna Paulowna furniture factory, The Hague
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 45, 494
Signed on the inside of the seat rod: Gebr. Horrix ('Horrix Brothers').

A chair with a high seat. The frame is formed by oak posts and rods, with tenon and mortise connections. The back rods have been sawn to shape. Webbing has been spanned across the fixed seat frame, swathed in filling, and a horsehair covering has been attached by means of decorative nails. The upholstery is not original in this model.

This type of chair with an open back first appeared in around 1830 and was manufactured until around 1890. Characteristic features are the back posts that curve and extend in one flowing movement into the backrest.

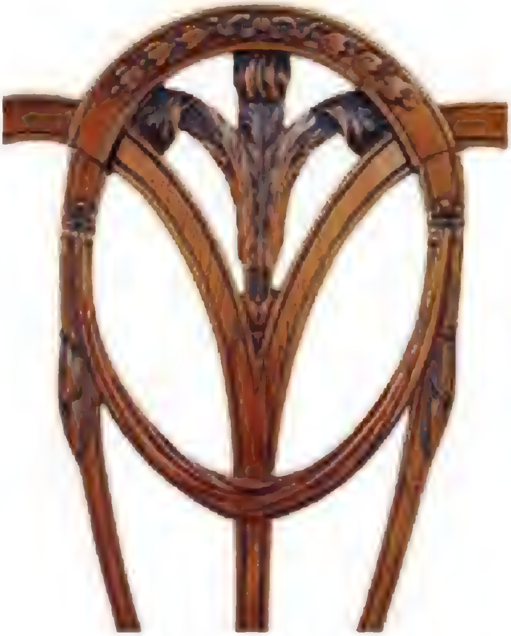
In 1842, after completing their training as furniture-makers in Paris, the brothers Matthieu and Willem Horrix returned to The Hague. They jointly took over the company from their father Pieter Paulus, and under their guidance it became the largest furniture company in The Hague and, later, in the whole of the Netherlands. In 1850, they opened the Anna Paulowna furniture factory, which was the first furniture factory in the Netherlands to be equipped with a steam machine.

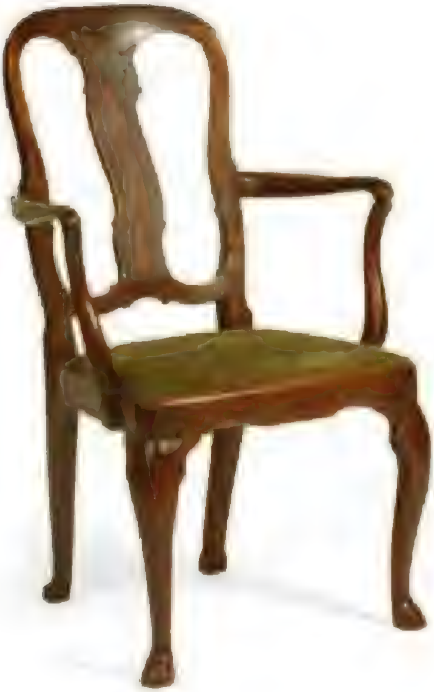


Unknown, chair with armrests (Hepplewhite), after 1788
Inv. no. 20032137
Oak; jute webbing, filling, velour
46 × 97 × 61 × 51 cm
Unknown
Lit.: F.L. Hinckley, *Hepplewhite, Sheraton & Regency Furniture*, New York 1987, pp. 66; 69; A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, pp. 166-168

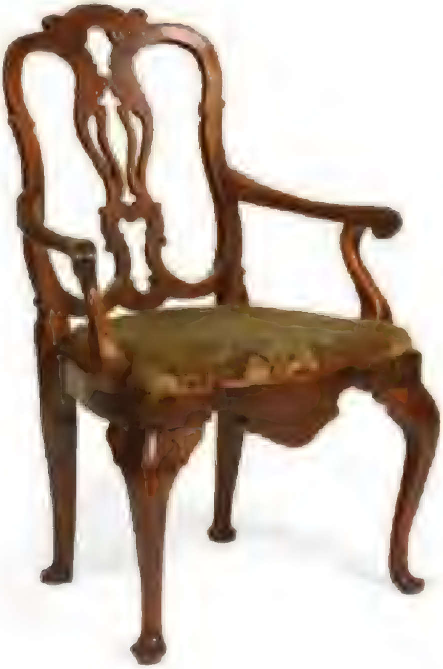
The frame of this chair with armrests is made of oak and is constructed by means of tenon and mortise joints. The chair has tapering, fluted legs. The front legs extend upwards to support the armrests. An upholstered cushion is attached to the horizontally curved armrests. The backrest is heart-shaped and bears ornamental wood carving, including a 'Prince of Wales' feather motif. The upholstered seat is supported by jute webbing and is covered with striped velour, just like the armrest cushions.

The grooves in the legs are characteristic of Louis XVI furniture, although the backrest displays the typical Hepplewhite style. After George Hepplewhite died, his widow published his furniture designs in *The Cabinet-Maker and Upholsterer's Guide* in 1788. The simple, elegant designs for living room and bedroom furniture influenced the furniture design primarily of 'provincial' furniture designers. The designs were mainly interpretations of the models in other sample books, but the 'Prince of Wales' feathers, as a part of the decoration pattern, were regarded as an original Hepplewhite motif. The chair depicted here was probably (partly) copied by a Dutch furniture-maker from an English sample book.

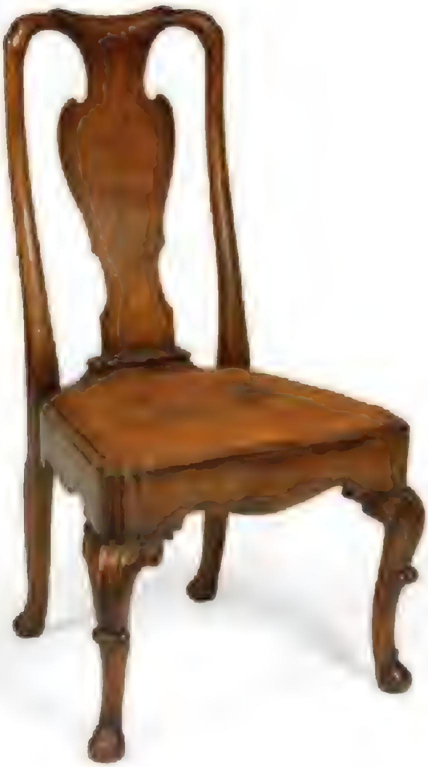




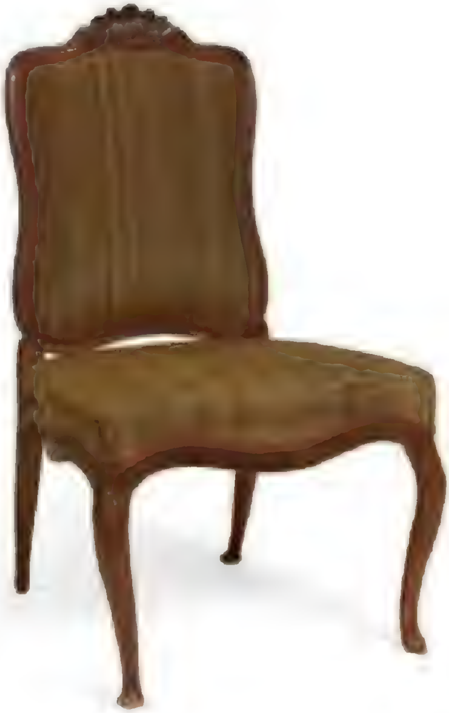
Unknown, chair with armrests (Louis XV), approx. 1750–1770, separate seat 19th century (?)
Inv. no. 20032087
Elm; webbing, filling, moquette
48 × 100 × 62 × 60 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 146



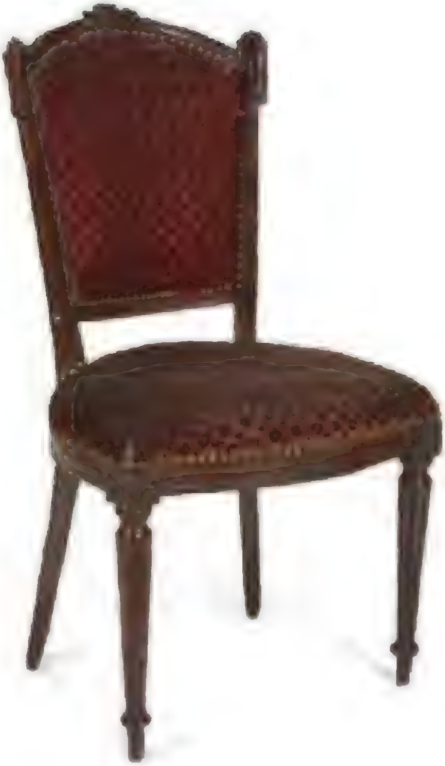
Unknown, chair with armrests (Louis XV), approx. 1750–1760, separate seat, 19th century (?)
Inv. no. 20032091
Walnut; webbing, filling, moquette
47 × 100.5 × 62 × 59 cm
Unknown
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 146



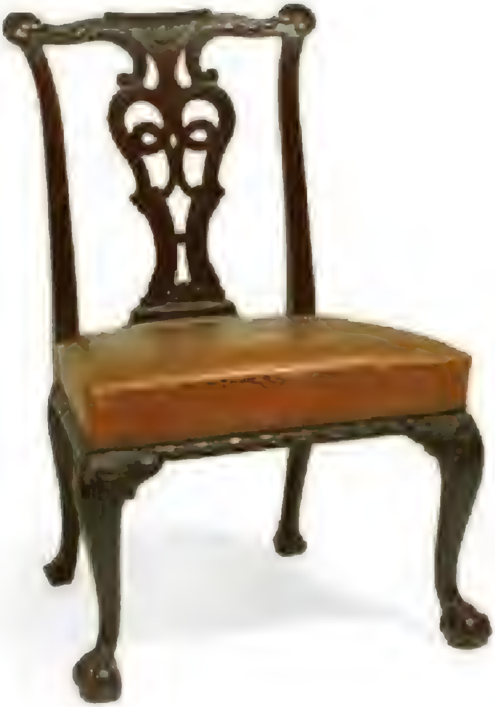
Unknown, chair (Queen Anne), approx. 1730–1740
Inv. no. 20032144
Burlwood and walnut; horsehair, leather
46 × 105 × 57 × 58 cm
Unknown
Lit.: A.C.H. Hofstede, *Nederlandse meubelen. Van barok tot biedermeier, 1700–1830*, Zwolle 2004, p. 107



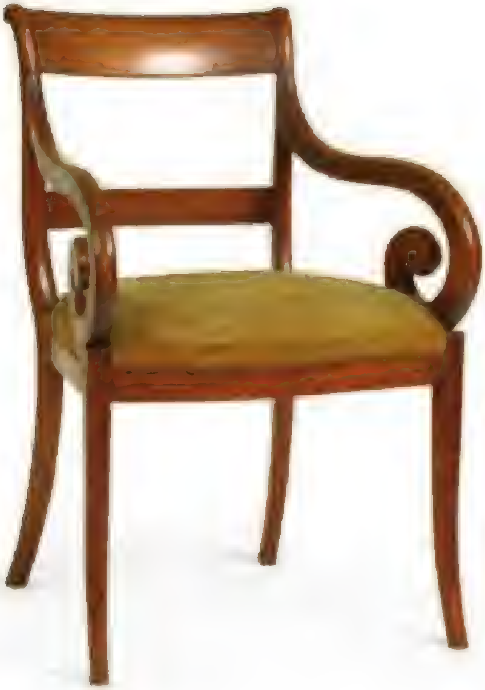
Unknown, chair (Louis XV), approx. 1740–1770
Inv. no. 20032098
Walnut; webbing, upholstery replaced
46.5 × 103 × 61.5 × 62 cm
Unknown



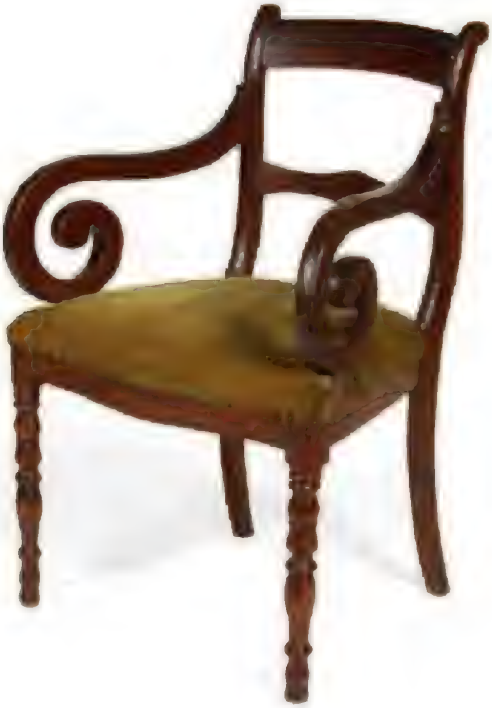
Unknown, chair (Louis XVI genre), 1870–1890
Inv. no. 20032107
Oak, partly varnished purple; seat: webbing, filling, moquette; back: jute, silk
45 × 96 × 50 × 55 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 504



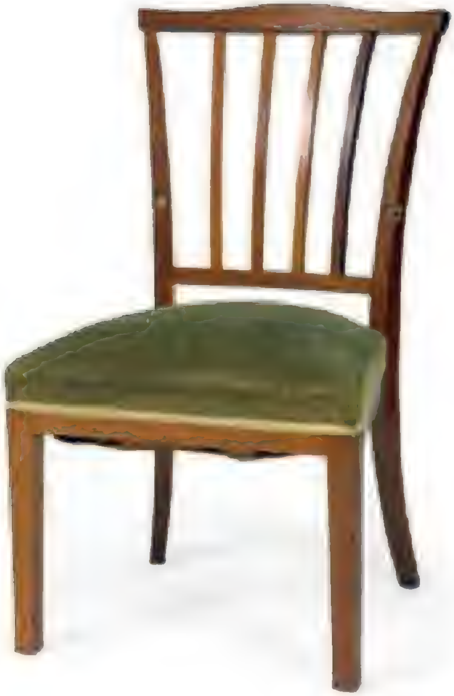
Unknown, chair (Chippendale genre), 19th century (?)
Inv. no. 20032094
Mahogany, dark-varnished; webbing, filling, leather
49 × 97 × 64.5 × 56 cm
Unknown, English
Lit.: A.C.H. Hofstede, *Meubelkunst. 40 eeuwen meubelgeschiedenis*, Amsterdam 1989, p. 137



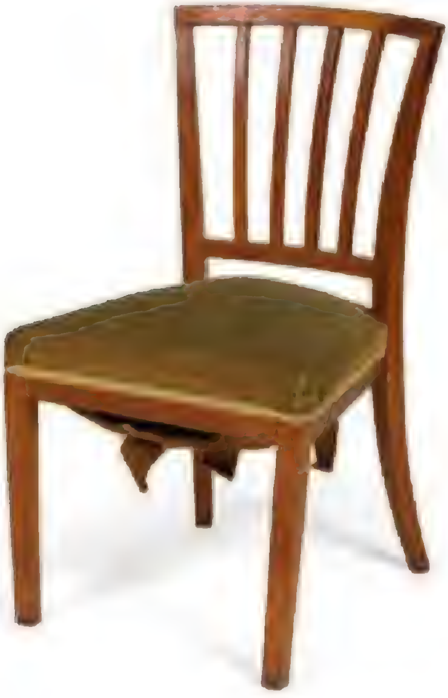
Unknown, chair with armrests (Biedermeier), 1820–1840
Inv. no. 20032231
Elm; webbing, jute, horsehair, cotton, corduroy
50 × 86 × 57.5 × 58 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 27



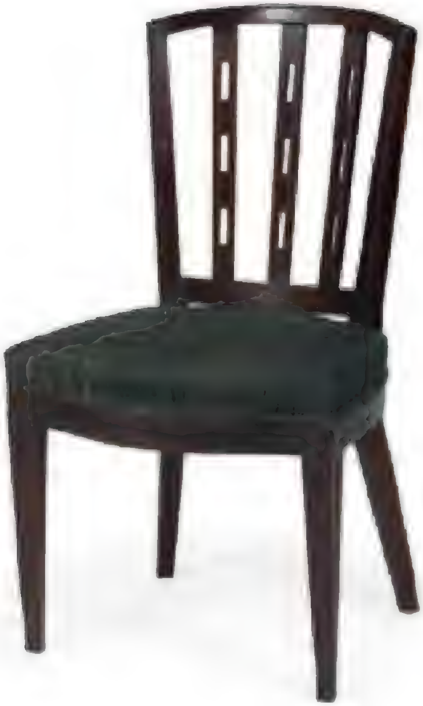
Unknown, chair with armrests (Biedermeier), 1840–1850
Inv. no. 20032102
Beech, waxed; planks, filling, corduroy
46 × 89 × 57.5 × 55.5 cm
Unknown
Lit.: J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, pp. 26, 27



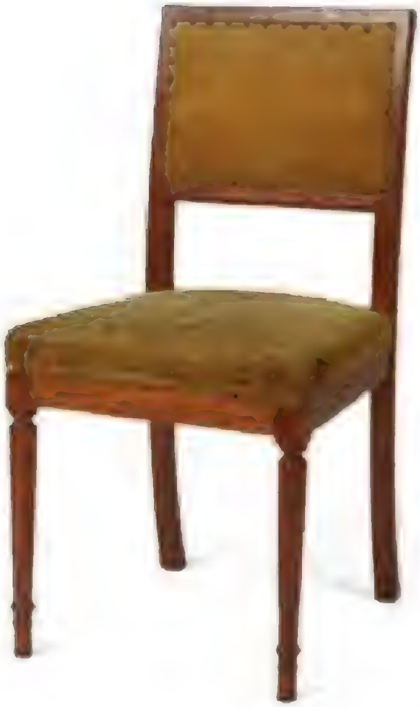
Unknown, chair with missing armrests, 1850–1900 (?)
Inv. no. 20032196
Oak, clear-varnished; webbing, vertical springs, jute, kapok, corduroy
51 × 97 × 55.5 × 63 cm
Unknown



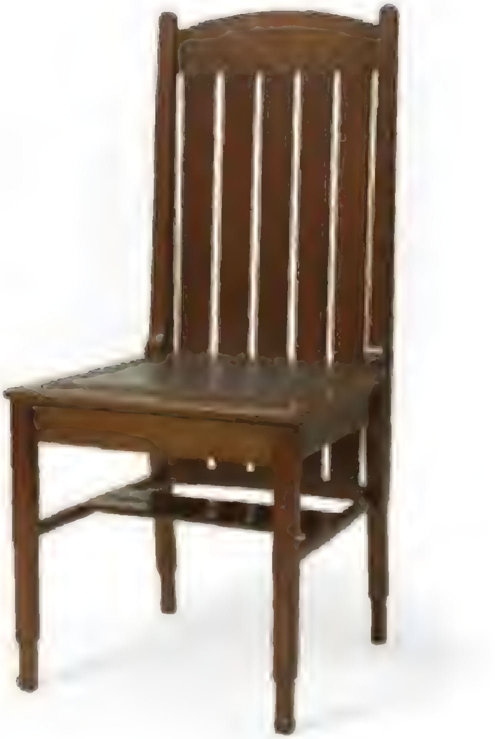
Unknown, chair (late Louis XVI), 1800–1850
Inv. no. 20032136, 20032188
Elm, clear-varnished; webbing, cylindrical springs, corduroy
49 × 90 × 49 × 55 cm
Unknown



Unknown, chair (late Louis XVI), 1790–1800
Inv. no. 20032186
Elm, varnished dark-brown; webbing, filling, horsehair fabric
48 × 88.5 × 50 × 52 cm
Unknown



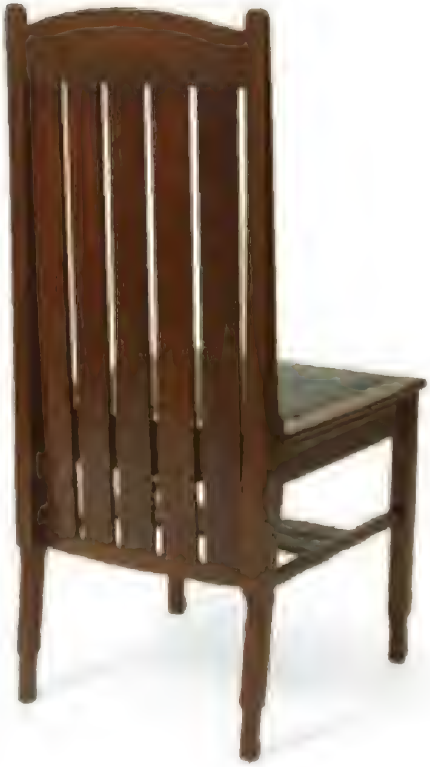
Unknown, chair, 1850–1880
Inv. no. 20032081
Oak; webbing, jute, horsehair, cotton, corduroy
48.5 × 89 × 45 × 50 cm
Unknown

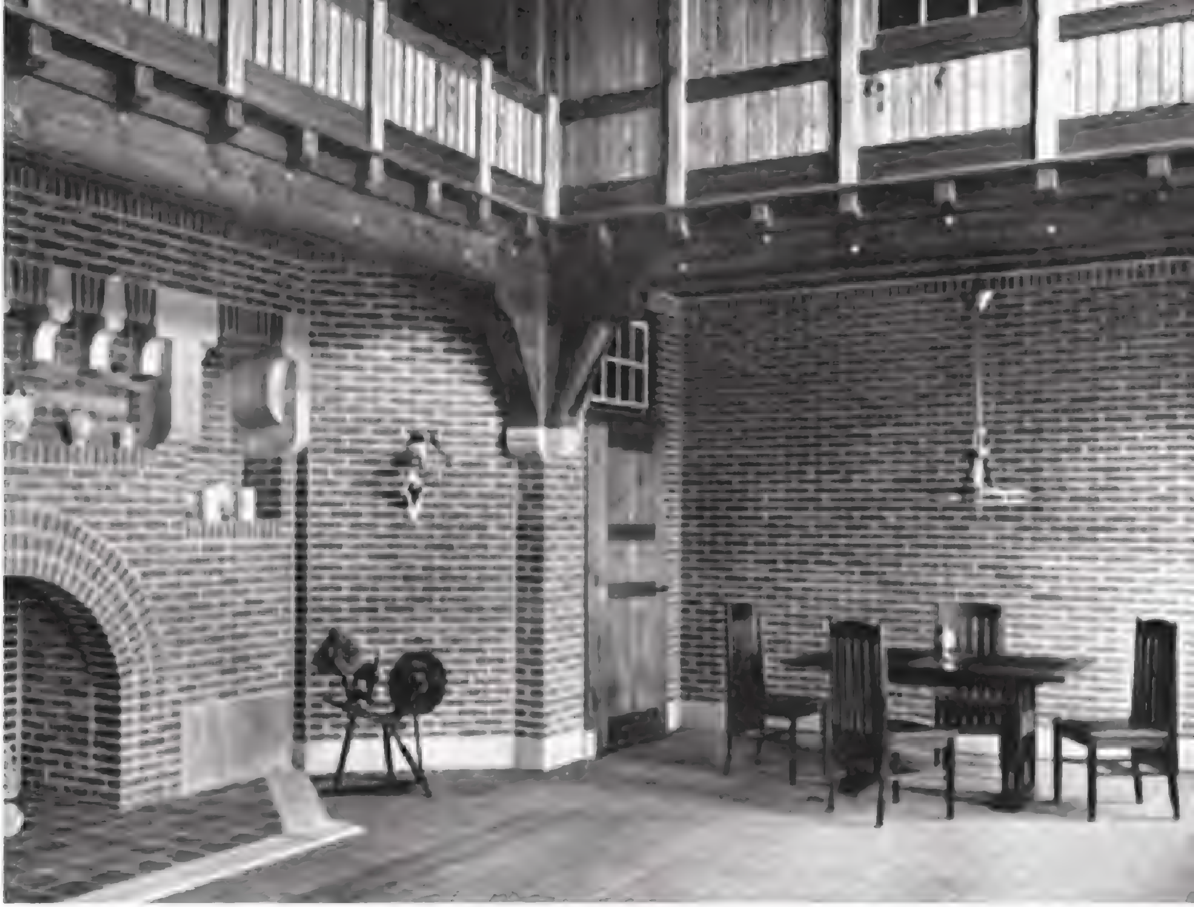


Hendrik Petrus Berlage, chair, 1915
Inv. no. 20032229
Wood; webbing, horsehair and canvas
46 × 103 × 47 × 49.5 cm
Unknown
Lit.: T.M. Eliëns, *H.P. Berlage, ontwerpen voor het interieur*, Zwolle 1998, p. 94

Chair with a high seat. The chair consists of waxed oak tenon and mortise latticework, which is reinforced with dowels at the most important points. The seat rods have a hollow profile; extra rods are screwed to the insides to fix the upholstery, which consists of webbing, horsehair and canvas. The canvas is fastened with small decorative rosette tacks. The top bar and posts have been sawn into shape. The back rods are screwed to the seat rod in such a way that the screws remain visible.

Berlage produced this chair for the Schipborg farmstead in the Province of Drenthe. The chair clearly shows the influence of Frank Lloyd Wright, who mentioned Berlage and Henri van de Velde as the most significant European followers of his furniture ideas. The farmstead in the village of Anloo in Drenthe was designed in accordance with the traditional inner courtyard principle, which was common in the southern part of the Netherlands. It has pronounced Wright-like features, such as the layout of the spaces along two axes, with a hearth group in the middle. The structure of the chairs calls to mind the chair designs that Wright created for the dining room of his own house in Oak Park, Illinois. Particularly the back section, which continues to a point below the seat, corresponds with this chair. Within Berlage's oeuvre, these chairs can be

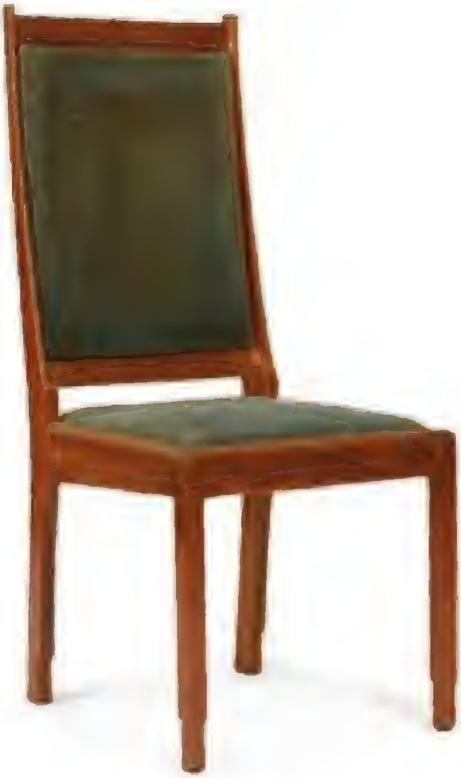




The living hall in the De Schipborg farmstead, with the furniture designed by Berlage. Source: J. Gratama, *Dr. H.P. Berlage Bouwmeester*, Brusse's Uitgevers-maatschappij, Rotterdam 1925, p 122.

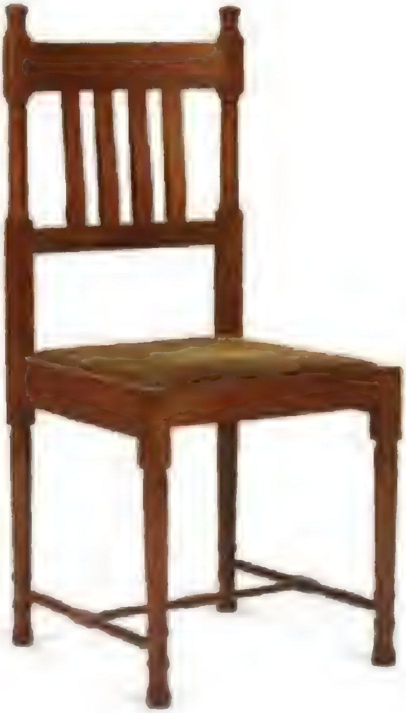
regarded as unique due to their rather sensual form. The typical Berlage structure of the rear legs, where the transition from the legs to the backrest is emphasized, is also present here in rudimentary form.

Most chairs from the collection were designed for and produced by the *'t Binnenhuis* furniture studio, which was founded by Berlage and Jacques van den Bosch in 1900. The aim of the *'t Binnenhuis* was to produce objects that were both well designed and affordable. The furniture designed by Berlage and Van den Bosch was characterized by an emphasis on the construction: wood was used in line with its constructive properties. The use of veneer and bent wood was deliberately avoided. The wooden parts were connected by means of tenon and mortise joints that were explicitly displayed. The dowels and other constructive end parts were left in full view and were occasionally even made of a contrasting type of wood. The first triumph that *'t Binnenhuis* achieved was at the Exhibition for Decorative Arts in Turin in 1902, where the Dutch submission was awarded the golden medal. The public, too, was very positive about Dutch furniture and interiors, which were conspicuous for their sober, lucid design. Despite this award, the production of *'t Binnenhuis* remained limited, the aim of making truly affordable furniture was never realized, and a series of major setbacks brought the company to the edge of bankruptcy on several occasions.



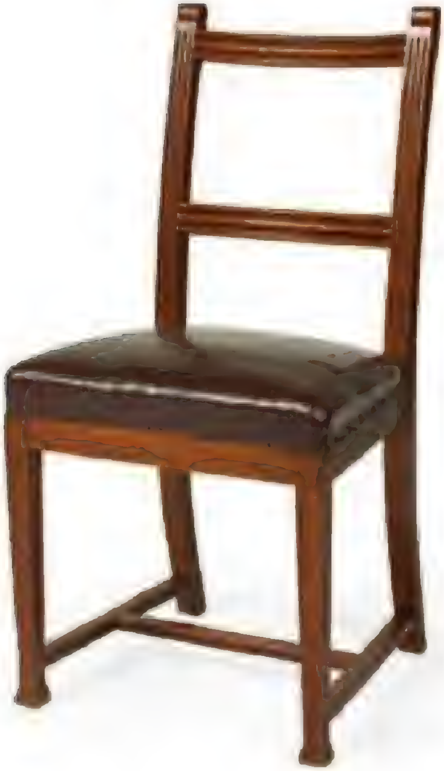
Hendrik Petrus Berlage, chair, 1920
Inv. no. 20032241, 20070030
Lacquered wood; corduroy
45 × 104 × 45 × 53.5 cm
't Binnenhuis, Amsterdam
Lit.: J. de Jong, *De nieuwe richting in de kunstnijverheid in Nederland*, Rotterdam 1929, p. 22
Loan from the NAi

Table chair with high backrest. The frame is made entirely of lacquered wood, with hidden dowel joints. The seat and the front and side of the backrest are covered with blue-grey corduroy. The sobriety of the chair is typical of Berlage's furniture designs. Simple ornamentation has been applied at the bottom of the legs and at the transition from the rear leg to the backrest.

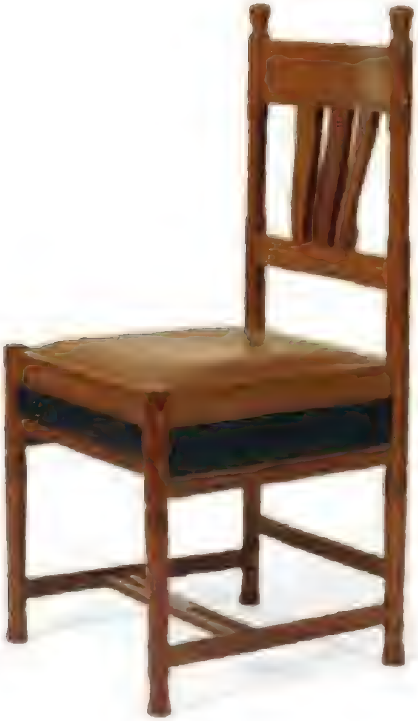


Hendrik Petrus Berlage, chair, 1900–1925
Inv. no. 20032154
Oak; corduroy
44.5 × 94 × 42 × 43 cm
't Binnenhuis, Amsterdam

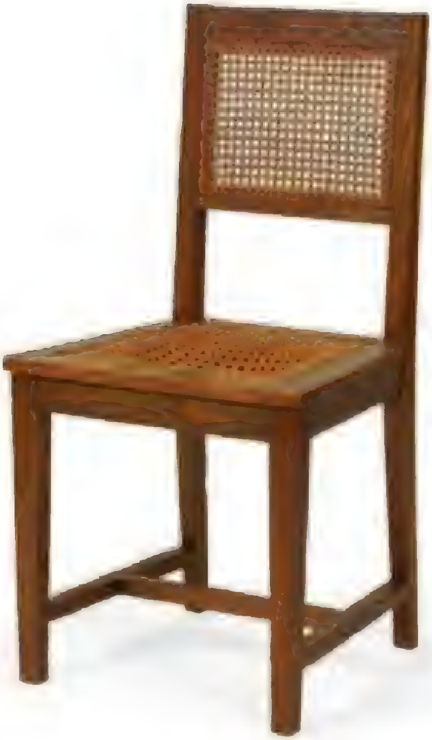
The brand mark of 't Binnenhuis and of Berlage are shown under the seat. A straight chair with a high backrest. It is made of oak latticework that has been turned at some points and waxed. The legs are mutually connected by thin, turned-wood rods. The detached seat cushion consists of a latticework on which webbing has been spanned, a layer of felt, with brown corduroy as upholstery.



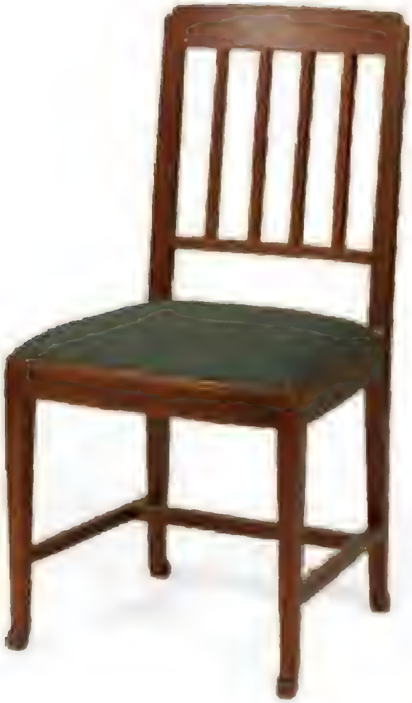
Unknown, chair, beginning of 20th century
Inv. no. 20032228
Oak; webbing, filling, canvas
49 × 91 × 46 × 50 cm
Unknown



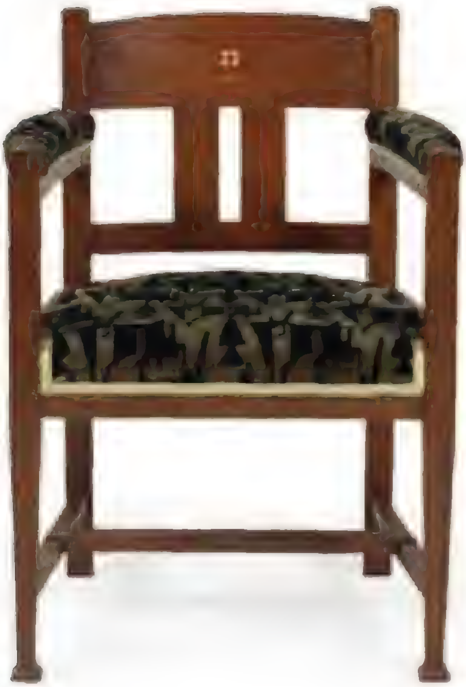
Unknown, chair, 1900–1925
Inv. no. 20032125
Oak; Macassar ebony, webbing, filling, leather
47 × 95 × 44.5 × 48.5 cm
't Binnenhuis, Amsterdam
A branded S is shown next to the 't Binnenhuis brand.



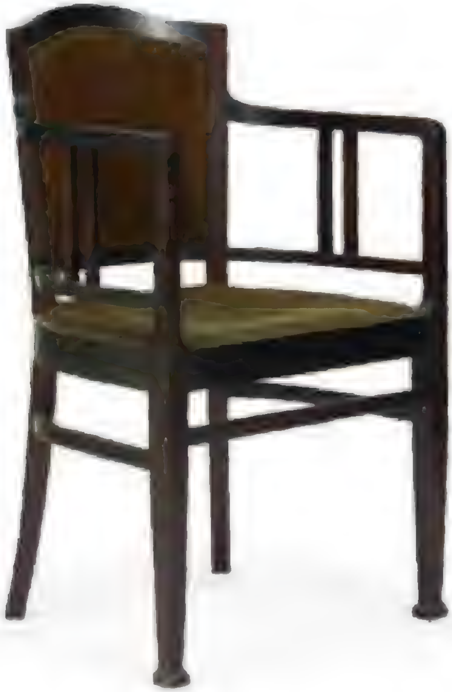
Unknown, chair, approx. 1905 (?)
Inv. no. 20032213
Oak, waxed; split cane
45.5 × 90 × 46 × 44 cm
Unknown



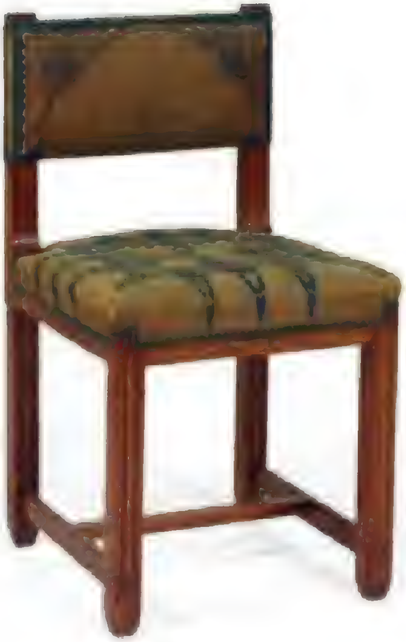
Karel Petrus Cornelis de Bazel, chair, approx. 1906
Inv. no. 20032257
Wood, upholstery
48 × 91 × 46.5 × 48 cm
Unknown
Loan from the NAI



Jacques van den Bosch (?), chair with armrests, approx. 1900
Inv. no. 20032169
Oak; upholstery with mohair textile
46 × 80 × 56.5 × 51 cm
Unknown



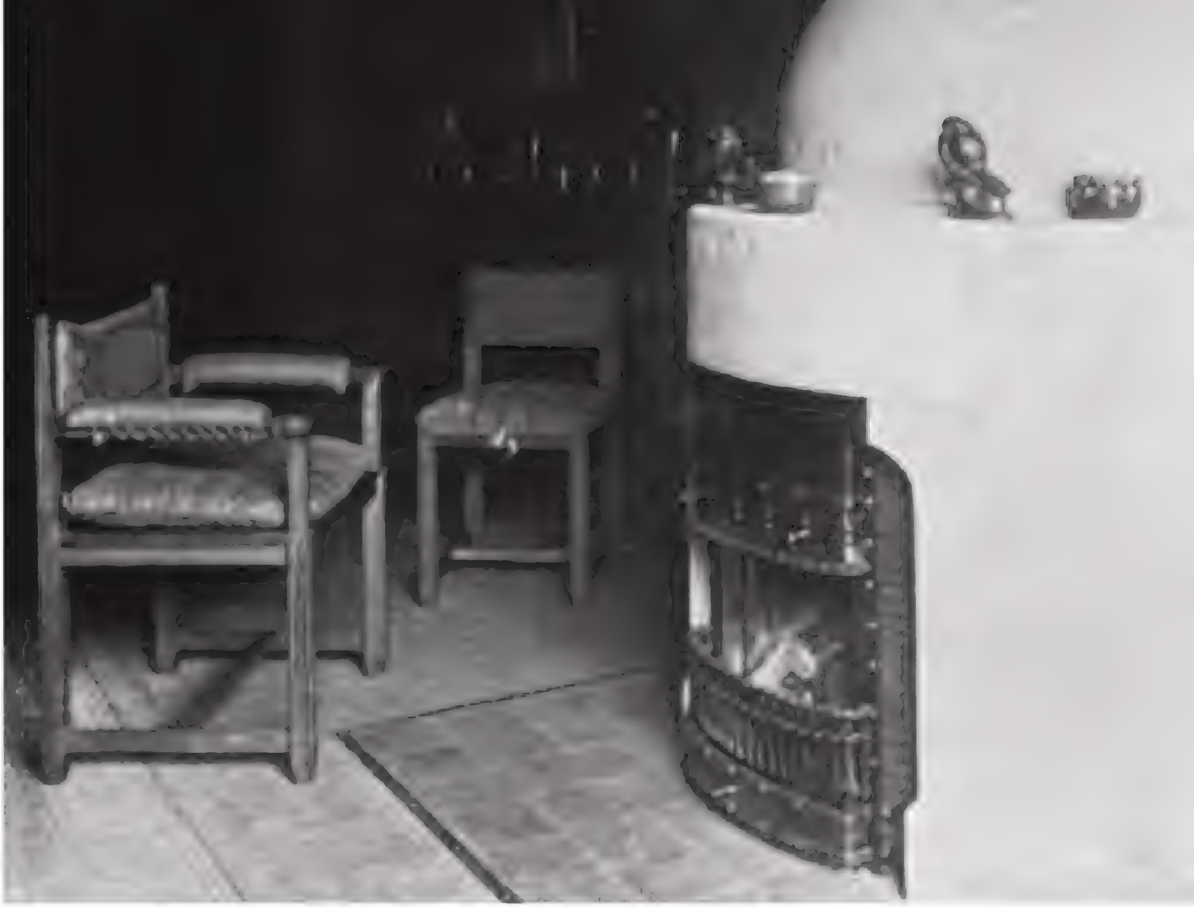
Unknown, chair with armrests, 1900–1930
Inv. no. 20032242, 20070026
Wood, in a dark lacquer; corduroy
46 × 91 × 54.5 × 52 cm
Unknown
Loan from the NAI



Jacques van den Bosch, chair, 1900
Inv. no. 20032160
Oak; horsehair, batik
49 × 83 × 44 × 47 cm
't Binnenhuis, Amsterdam
Lit.: *Jac. van de Bosch en de vernieuwing van het Binnenhuis*, exhib.cat. Frans Halsmuseum (De Hallen), Haarlem 1976, p. 16

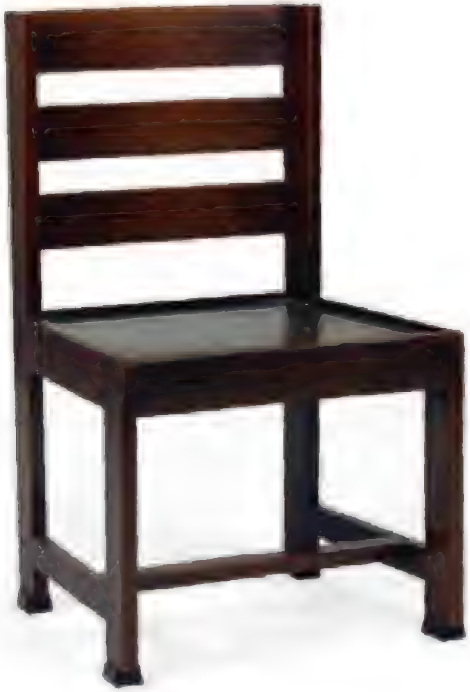
Straight high chair. The chair consists of solid wood parts that, as Jac. van den Bosch himself describes, were 'cold amassed', by which he means that the sections were joined at right-angles by means of tenon and mortise connections. The tenons of the oak latticework construction protrude through the posts and are visible as a crosscut surface. The round dowels used to fix the tenons are also visible. The seat and the backrest are upholstered with fabric bearing a pattern by Chris Lebeau, who also worked as a batik designer.

The chair was designed to mark the foundation of the 'N.V. tot het ontwerpen, vervaardigen en verkoopen van huisraad Het Binnenhuis' ('Limited company for the design, manufacture and sale of Het Binnenhuis furniture') in 1900, which was an initiative of H.P. Berlage. With the establishment of *'t Binnenhuis* an attempt was made to offer an alternative to the prevailing influence of Art Nouveau furniture, which was imported from Belgium at that time, and to historical styles in general. One of the partners of the company was Van den Bosch who had become acquainted with Berlage via a former employer. They developed a friendly relationship and often talked about architecture and applied art and the ideas of William Morris, John Ruskin and Walter Crane. The ideas expressed by Berlage, who was twelve



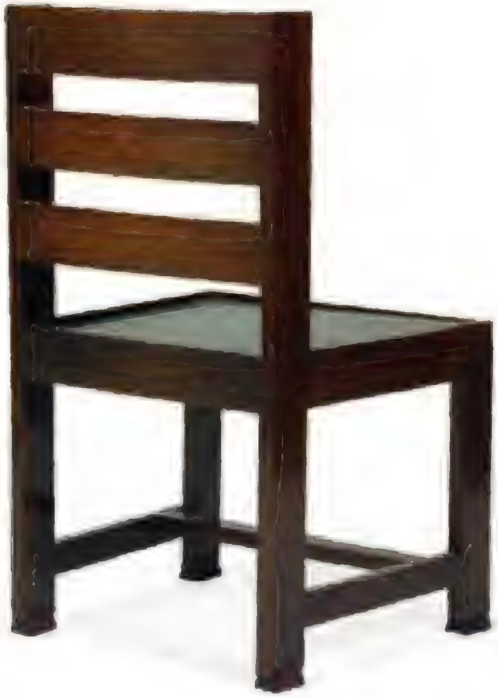
Chairs by Jacques van den Bosch in the branch of 't Binnenhuis on the Rokin in Amsterdam in 1900. Source: E. & H. Van den Bosch, *Gedenkboek 'een kleine biografie' over Jac. P. van den Bosch*, Uitgeverij Codi, Haarlem 1979, p. 13.

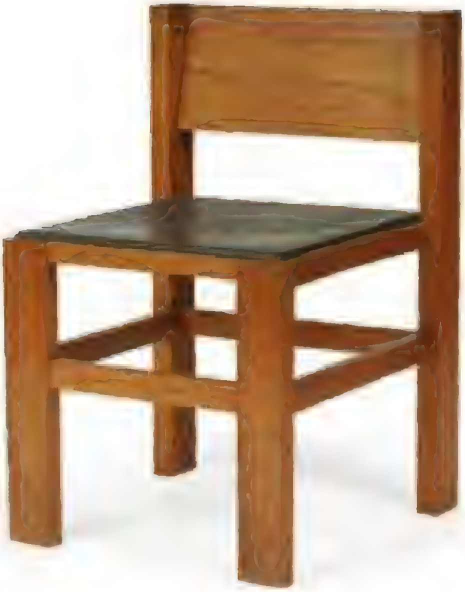
years older than Van den Bosch, had a great influence upon the latter. In stylistic terms, his work strongly resembled that of Berlage, even before the foundation of *'t Binnenhuis*. The striking austerity of the furniture produced by *'t Binnenhuis* was new to Dutch consumers. The fact that it was greatly appreciated was demonstrated at the international interior fair of Turin in 1902, where many Dutch furniture manufacturers exhibited their products. The model interior which was created by Berlage and arranged by Berlage and Van den Bosch, received much critical acclaim.



Jan Wils, chair, 1920–1930
Inv. no. 20032246, 20070024
Oak
42.5 × 85 × 50 × 48 cm
Unknown
Loan from the NAI

The frame of this chair consists of a dark-varnished oak construction of rectangular posts and crossbars connected by invisible tenon and mortise joints. The three planks that form the backrest are curved, and the legs are stabilized lower down by side rungs and a central crossbar. At the ends of the legs, the extremities are of Macassar ebony. A plank is sunken between the four bars of the seat frame. This lower level suggests that the seat once had a cushion, but that is now absent. Triangular blocks reinforce the corner joints between the side rungs and the front crossbar.

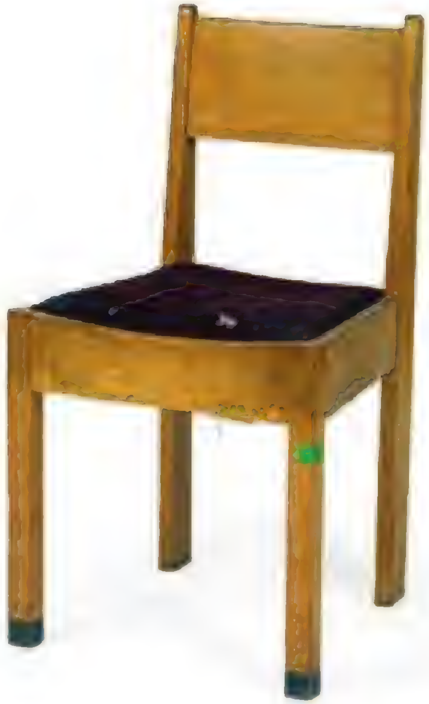




Jan Wils, chair, 1921
Inv. no. 20032245
Oak; black oilskin
45.5 × 75 × 50 × 50.5 cm
Unknown
Lit.: J.P. Mieras, 'Het Atelier van Berssenbrugge te 's-Gravenhage', *Bouwkundig Weekblad*, 1922, no. 16, pp. 150-152; *De Stijl*, 1922, no. 5, pp. 165, 323; *Nederlandsche Ambachts- en Nijverheidskunst Jaarboek 1922*, Rotterdam 1923, fig. 5; J. Franso et al., *De stijl van Jan Wils. Restauratie van de Papaverhof* (VOM series no. 4), The Hague 1989, p. 52; T. de Rijk, *De Haagse Stijl. Art deco in Nederland*, Rotterdam 2004, p. 60
Loan from the NAI

The chair of clear varnished oak consists of a post and bar construction with a rectangular cross-section, and is fitted together by means of tenon and mortise joints. The seat consists of a plank covered with black oilskin.

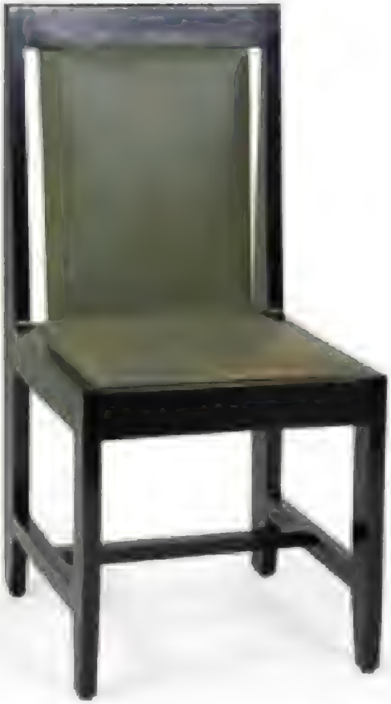
This chair displays a great similarity with a chair from the interior of the photographic studio of Henri Berssenbrugge in The Hague. This extension to the house, including the interior, was designed by Wils in 1921, in conjunction with Vilmos Huszár. The interior carefully combined architecture, colour schemes and furniture in order to create a 'loose and light space'. The chair on the photograph has a black frame and a light-coloured seat, but this colour scheme is exactly the opposite of that of the chair in the collection. The rungs between the legs also seem to be lower in relation to the seat.



Unknown, chair, 1924–1935
Inv. no. 20032248
Wood; webbing, filling, corduroy
49.5 × 81 × 45 × 46 cm
Unknown
Lit.: K. Gaillard, *Labor Omnia Vincit. Een idealistische meubelfabriek 1910–1930*, Arnhem 1991, pp. 75-77
Loan from the NAI

Chair consisting of a lightly varnished frame with tenon and mortise connections. The front legs are square in their cross-section, while the rear legs are rectangular. The rear legs continue upward to form tapering posts for the backrest. The backrest is a curved plank lodged between the posts. The front crossbar of the seat is a little hollow, to offer more comfort. The contrasting black-varnished lower parts of the front legs are typical of the period. The seat is slightly elevated by means of webbing stuffing, filling and corduroy.

Many similar chairs were produced in the 1920s. The type was designed by J.A. Muntendam of the *L.O.V.* (Labor Omnia Vincit) furniture factory, who, as he himself said, was always seeking material and form solutions for cheaper furniture. The model in the collection deviates from Muntendam's chair in that it has square front legs and a hollow front crossbar.

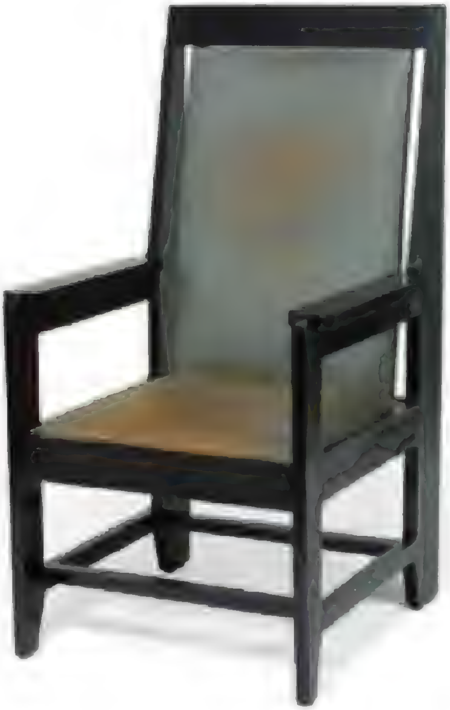


Cornelis M. van Moorsel, chair, 1919
Inv. no. 20032224
Macassar ebony; webbing, upholstery, grey leather
48 × 96 × 45.5 × 55 cm
Unknown
Lit.: J. Wils, 'Werken van C.M. van Moorsel', *Het Bouwbedrijf*, II (1925), pp. 138-139

This monastery chair is a straight chair with a high seat. It is a chair with a solid frame of black-varnished and lacquered ebony. The chair has a fixed, low-upholstered backrest, covered all around with grey leather. The separate cushion consists of latticework, webbing, thin padding and is upholstered with grey leather. Tenon and mortise joints are used to connect the sections.

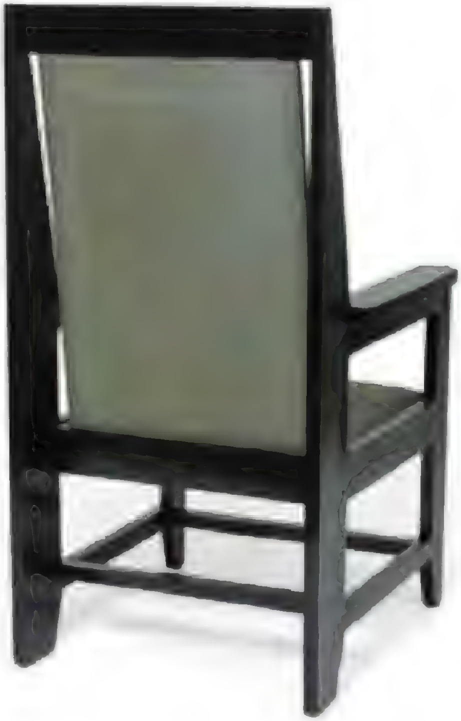
Both chairs are part of an ensemble designed in 1919 by the architect C.M. van Moorsel from The Hague, as an extension of a reconstruction assignment for a villa in Bloemendaal which was to accommodate a cloister for the *Vrouwen van Bethanië* (Sisters of Bethany). The reconstruction was not a comprehensive one – the attic was equipped with cells for the Sisters and a balcony was connected to the interior – but it was primarily the furniture designs that evoked acclaim in subsequent years. As Jan Wils articulated it in *Het Bouwbedrijf* magazine in 1925: 'Van Moorsel is still a very young architect who is fortunate in seeing various designs of his being implemented. And, what cannot be denied, this has taken place with good results. (...) In addition, Van Moorsel has also produced furniture and these are the best of all. The proportions of his items of furniture are very attractive, full justice has been done to the material used or, indeed, the effect of this has been enhanced most sensitively. (...) There is something of the good mass-produced furniture object in these designs, something of the strict, correct way of working, distinctive to the machine but mastered by the artist.' With his references to mass-produced furniture, Wils makes an appropriate observation: the admiration for the work of Berlage, who recognized the influence of mechanical production on the design of furniture, was never denied by Van Moorsel.

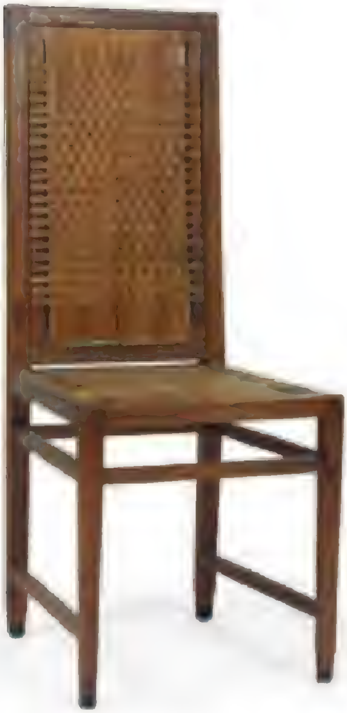
The items of furniture that Van Moorsel designed thus also display the influence of Berlage who consistently worked according to the rigid guidelines of an honest application of materials and a clear system of dimensions. Whereas this honest material use occasionally led to cramped exhibitionism in the construction, the need for honesty and lucidity in the work of Van Moorsel tended to lead to sober, elegant objects. He worked in The Hague and his furniture designs call to mind the designs of other designers in The Hague School such as Jan Wils, Frits Spanjaard and Cor Alons.



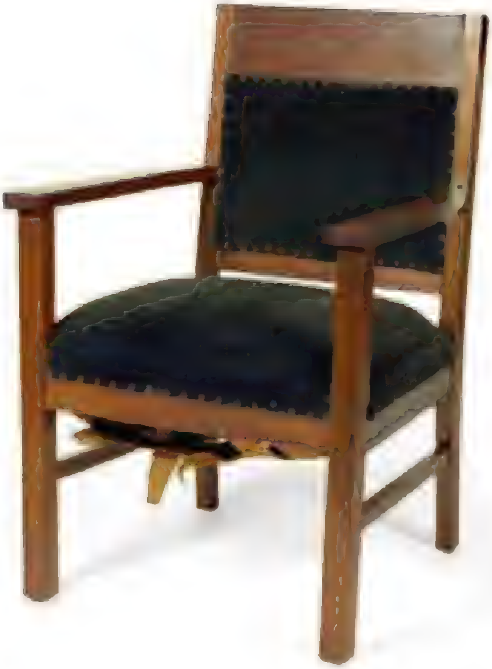
Cornelis M. van Moorsel, chair with armrests, 1919
Inv. no. 20032027
Macassar ebony; webbing, upholstered in grey leather
44 × 111.5 × 61 × 63.5 cm
Unknown
Lit.: J. Wils, 'Werken van C.M. van Moorsel', *Het Bouwbedrijf*, II (1925), pp. 138-139

A straight chair with high seat and armrests. It is a chair with a robust framework of black-varnished and lacquered ebony with straight horizontal wooden armrests. The wooden parts are connected by means of tenon and mortise joints. The back and seat have separate cushions made of latticework, webbing, filling, and upholstered in grey leather.

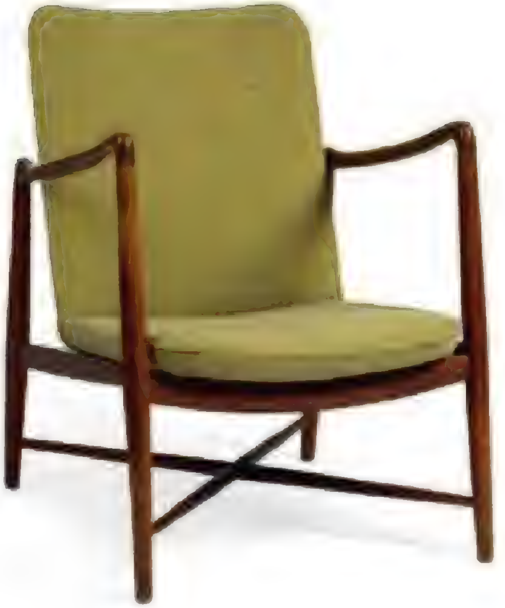




Dick Greiner, chair, 1924–1930
Inv. no. 20032244, 20070027
Wood; split cane
48 × 111 × 45 × 49 cm
Unknown
Loan from NAI



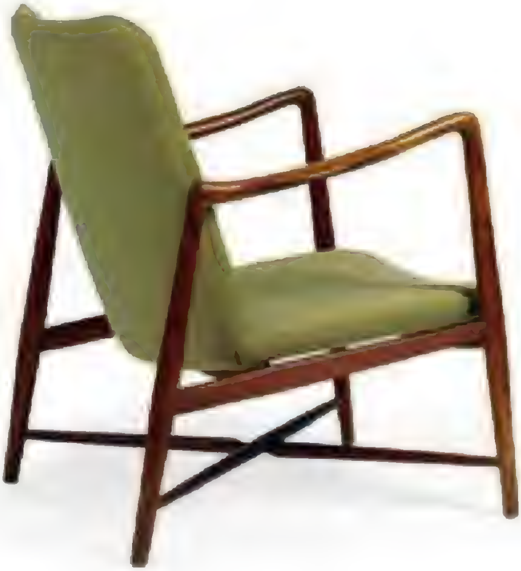
Unknown, chair with armrests, 1920–1930
Inv. no. 20032175
Oak, waxed; webbing, high springs, filling, corduroy
47.5 × 93.5 × 63 × 64 cm
L.O.V. (?)

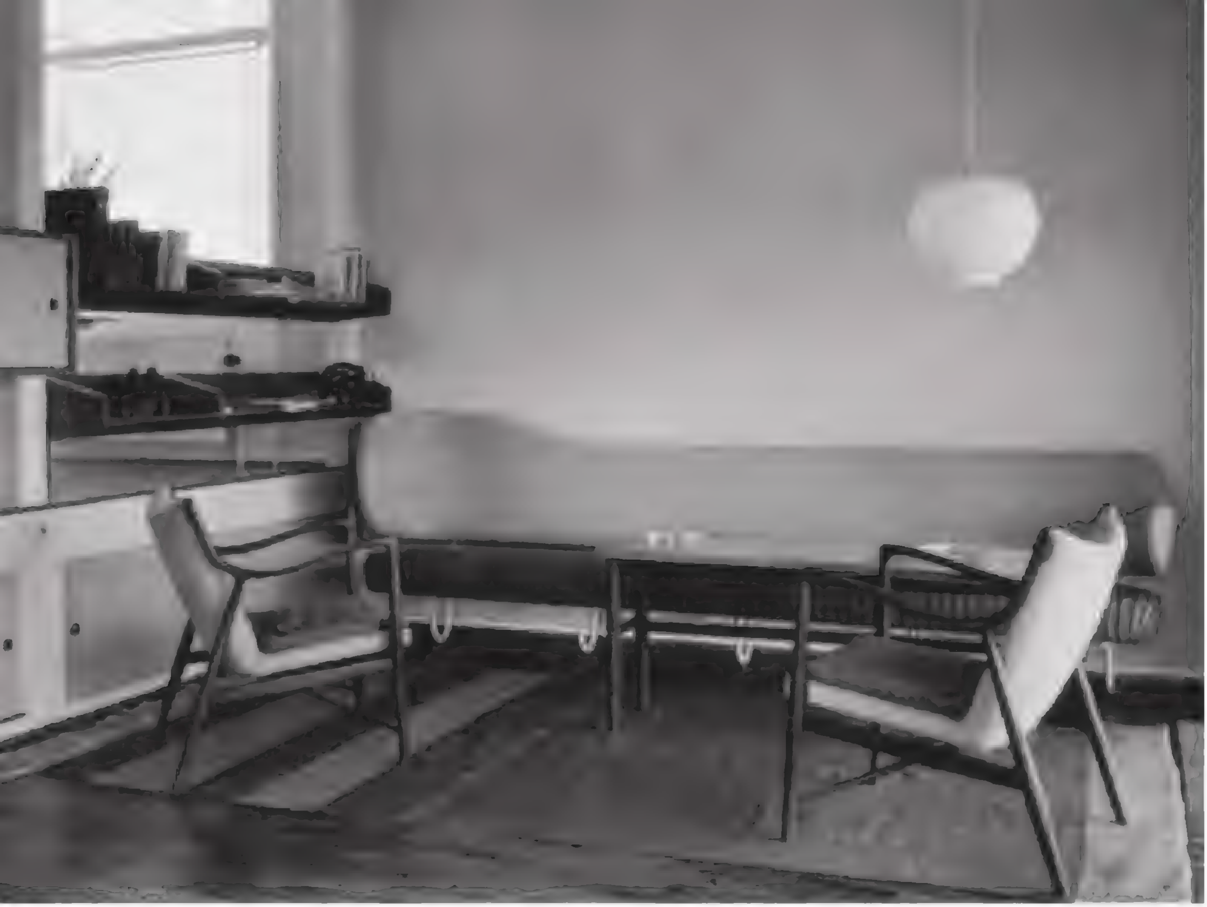


Finn Juhl, easy chair, 1954
Inv. no. 20032171
Teak; wood, foam rubber, textile
37 × 83 × 64.5 × 74 cm
Bovirke, Frederiksberg, Denmark
Lit.: E. Hiort, *Finn Juhl. Furniture, Architecture, Applied Art*, Copenhagen, 1990, p. 54

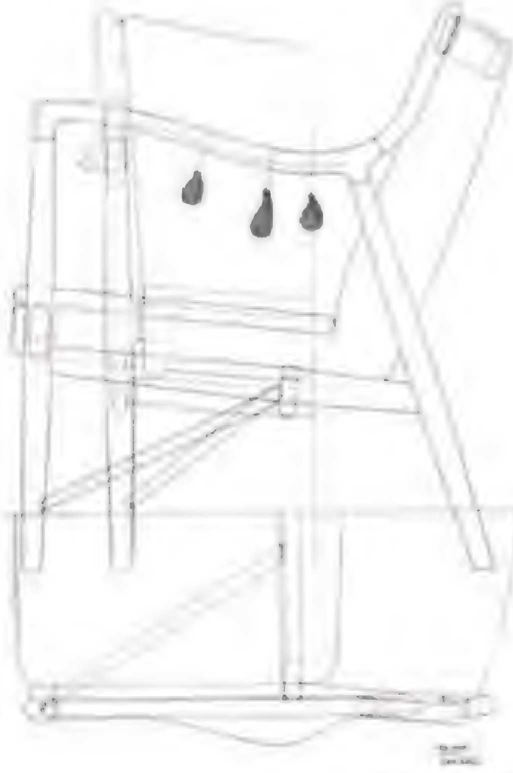
An easy chair with armrests. The teak frame is based on tenon and mortise connections, and the connections of the armrests flow easily into one another. The posts are rounded, but the extremities taper down from thick to thin. The armrests have been sawn to shape. The wood has been oiled. Crossbars stretch diagonally between the legs, as if the one has been inserted through the other. The seat and backrest consist of a post and bar framework, and bear low-level filling with foam rubber, and are covered all around with beige woollen epinglé. Five buttons have been sewn into the back.

This chair is one of several variations on Juhl's most renowned design, the *45 Chair* from 1945. The visual detachment of the seat and back from the supporting construction is a recurring feature in all the variants.





The '45' in the living room of Villa Aubertin in Rosnaes, in 1952. Source: idem, p. 101. Photographer: Strüwing.



Working drawing for the '45 Chair'. Source: E. Hiort, Finn Juhl, Danish Architectural Press, Copenhagen 1990, p. 28.

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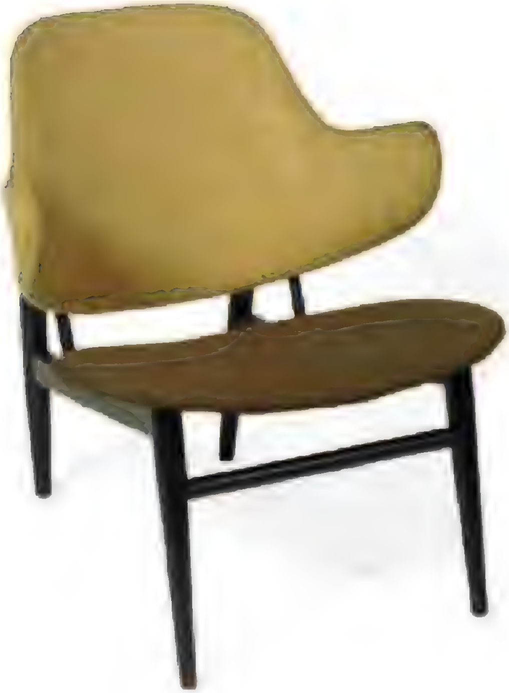
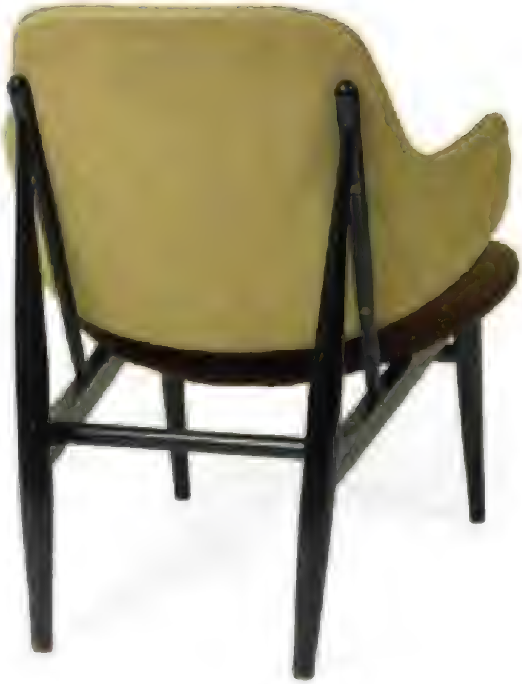
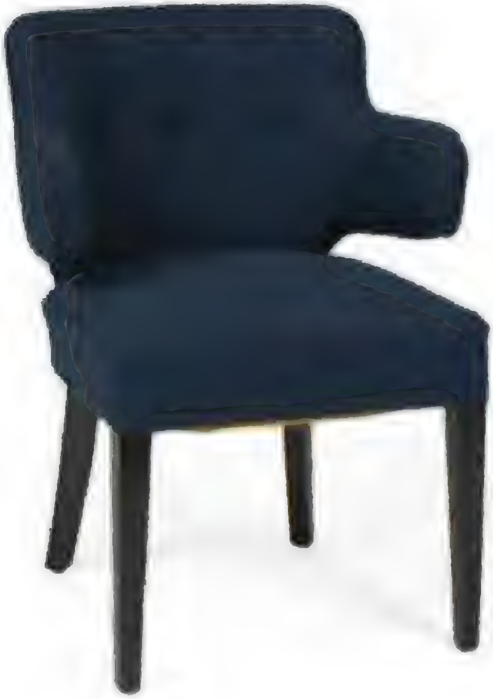


Ib Kofod-Larsen, easy chair with armrests, around 1950
Inv.no. 20032124
Teak; foam rubber, textile
38 × 75 × 63.5 × 72 cm
Originally: Christensen & Larsen Møbe håndværk, Denmark; later also (1952-?): Gelderland, Culemborg, model no. 1630
Lit.: N. Oda, *Danish Chairs*, Chronicle Books, San Francisco, 1999, p.162

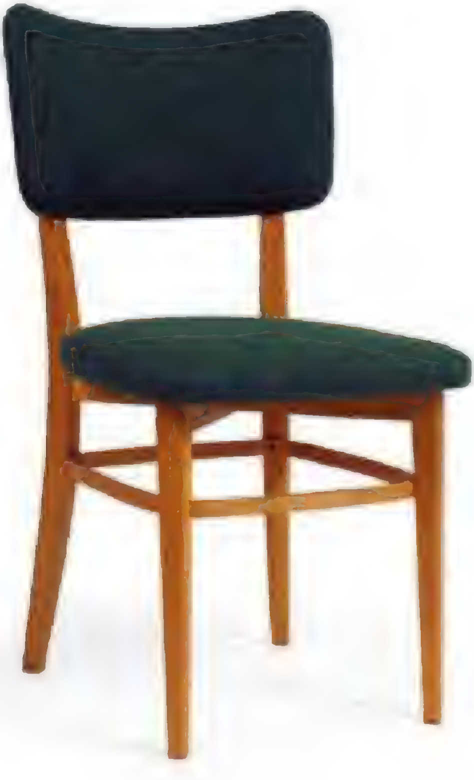
An easy chair with armrests. The chair has a teak frame, with tenon and mortise joints. Diagonal rungs stretch between the back posts and the seat bars, supporting the backrest at a comfortable angle. The seat and backrest consist of plywood bent into shape and upholstered with foam rubber and textile. Both have been visually detached from the supporting frame.

This chair was displayed at the exhibition of the Furniture Makers Guild in Denmark in 1950. Kofod-Larsen produced several similar chairs, occasionally with a steel frame. The visually detached and sculptural seat and backrest and the diagonal auxiliary construction, are also a feature of chairs created by Finn Juhl in the 1940s and 50s. The Gelderland factory made these chairs under licence for the Dutch market, 'according to the Scandinavian design'. The Danish designer was not named.

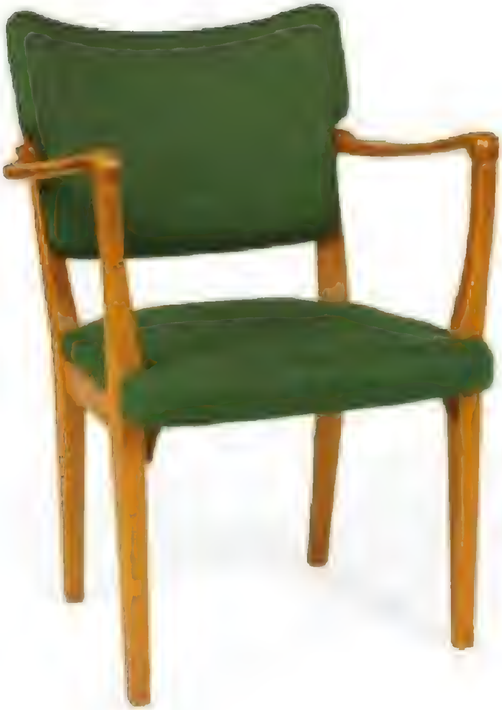




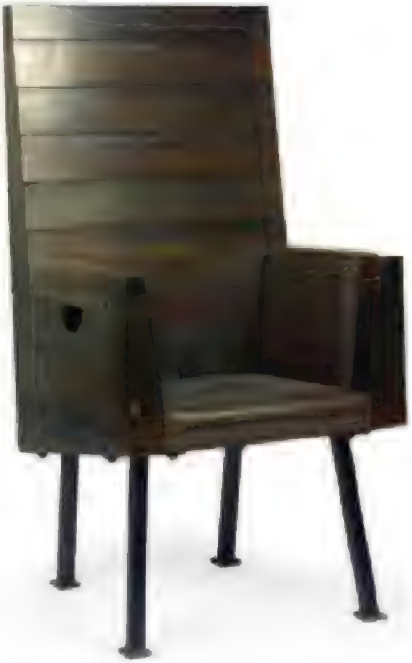
Frits Spanjaard (?), chair with armrests, approx. 1956
Inv. no. 20032172
Mahogany; upholstered with wool and synthetic material
51.,5 × 84.5 × 60.5 × 61.5 cm
Unknown
Lit.: M. van der Burgh, *Frits Spanjaard. Binnenhuisarchitect 1889–1978*, Rotterdam 1990, p. 34



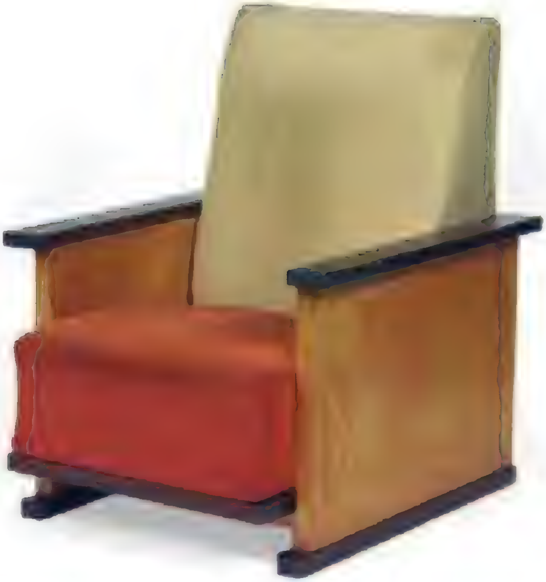
Unknown, chair, 1940–1960 (?)
Inv. no. 20032187
Maple; foam rubber, wool
45 × 82 × 45 × 52 cm
Unknown



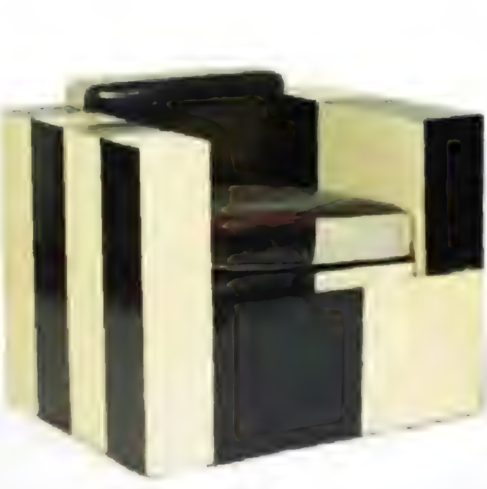
Unknown, chair with armrests, 1940–1960 (?)
Inv. no. 20032179
Birch, clear-varnished; wood, foam rubber, wool
45 × 80.5 × 59.5 × 59.5 cm
Nordiska Kompaniet, Stockholm, model number 562.004



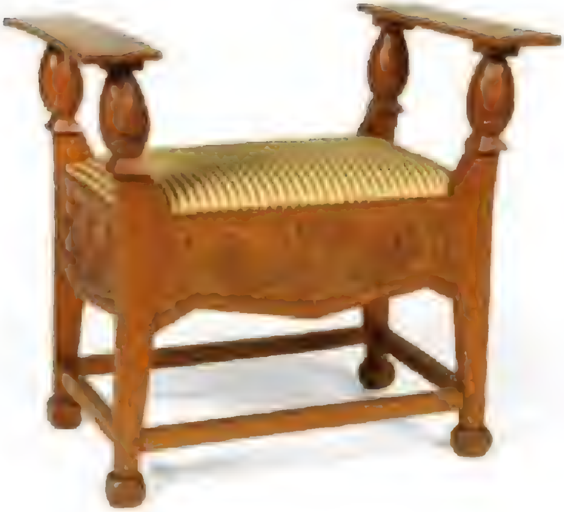
Jan de Jong, easy chair, after 1962
Inv. no. 20032234
Varnished wood; black-lacquered tubular steel
49 × 125 × 63 × 62.5 cm
Unknown
Designed for the council chamber in Budel.



Petrus Johannes Elling, easy chair, 1930s
Inv. no. 20032202
Avodiré and avodiré plywood, Macassar ebony; webbing, vertical springs, jute, horsehair, cotton, épinglé
41 × 92.5 × 72 × 84 cm
Unknown
Donation from Mrs. Doyer



Bruno Mertens, easy chair, 1967–1968
Inv. no. 20032251
Plywood; cushions with foam rubber, imitation leather
42.5 × 75 × 87 × 71 cm
Unknown
Loan from the NAI



Maria Tenicheva, stool, approx. 1900
Inv. no. 20032119
Wood, upholstery, satin
44 × 66.5 × 68 × 49 cm
Lit.: C. de Danilovicz, 'Talashkino, Princess Tenishef's School of Russian Applied Art', *The Studio*, 1907, Vol. XLI, 1907, pp. 135-140; L. Réau, *L'Art Russe*, Paris 1922, pp. 239, 243, 245, pl. 68; O. Strougova, 'Les ateliers de la princesse Tenicheva à Talashkino', in: *L'Art russe dans le second moitié des XIXe siècle: en quête d'identité*, exhib. cat. Musée d'Orsay, Paris 2006, pp. 181-202; S. Alsteens, 'L'inconstance de Maria Tenicheva', in: *L'Art russe dans le second moitié des XIXe siècle: en quête d'identité*, exhib. cat. Musée d'Orsay, Paris 2006, pp. 203-210

A stool from the Talashkino collection, with a high seat and broad armrests. It comprises a clear-varnished satinwood frame with tenon and mortise joints, reinforced by visible dowels. The seat frame bears woodcarving, while the armrests, which consist of solid smooth planks attached to the vertical posts by tenon and mortise connections, display wood turning. The upholstery covers a detachable seat frame to which webbing, smooth upholstery and textile of yellow-and-beige striped silk are attached.

In contrast to other objects from the collection, the stool can probably be attributed to Princess Maria Tenicheva on the basis of conspicuous stylistic correspondences.

The stool is a part of an ensemble of furniture that can be regarded as part of the most valuable treasure of the collection. It consists of Russian folklore items of furniture (three tables, four chairs, and a stool) that came from Princess Maria Tenicheva's artists' colony in Talashkino. The unorthodox fairytale-like character of the furniture is typical of the colony, where no two items are identical. There is no certainty about the individual creators of the furniture, although we can recognize the motifs of Alexei P. Zinovjev and the princess herself. The decoration shows stylized representations of the Firebird (*tsar-ptitsa*) that occurs in Russian folk tales.

Exactly how the items of furniture got into the collection is not clear. They were probably purchased by the Delft professor Sluyterman during a trip to Russia. It was probably not necessary to travel to the colony itself, which lay in the vicinity of Smolensk, around 400 kilometres south-west of Moscow. It is more probable that the items were purchased in a shop in Moscow that sold the work of the artists in Talashkino for a few years.

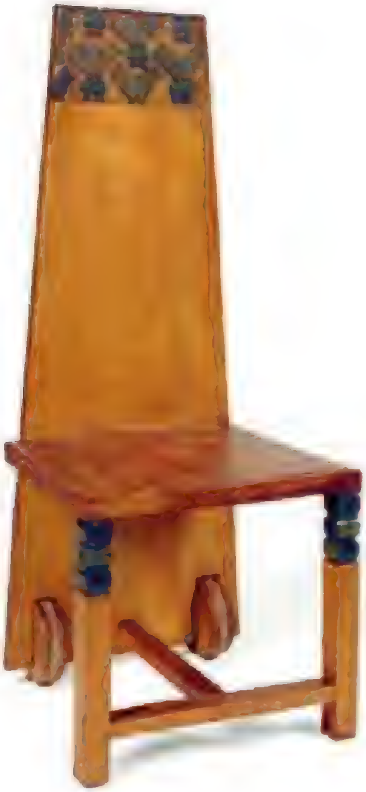
The ensemble is unique in the world. If the examples in the collection of Delft University of Technology are not taken into account, hardly any items from the colony remain although it did enjoy great renown at home and abroad during the period of its existence. Moreover, the objects are of an exceptionally high standard and in a particularly sound state.

To gain a better understanding of these extraordinary chairs, we must return to the second half of the 19th century. It was a period in which a new Russian nationalist movement arose, bringing the historical and folklore background of the Russian people to the fore. The year 1863 can be regarded as the origin of this development, when a group of thirteen artists demonstratively broke with the Academy of Arts in Moscow. They rejected the neo-classicist influences from the West that had penetrated into Russian art.

Detail of the front of the backrest; no. 20032080.

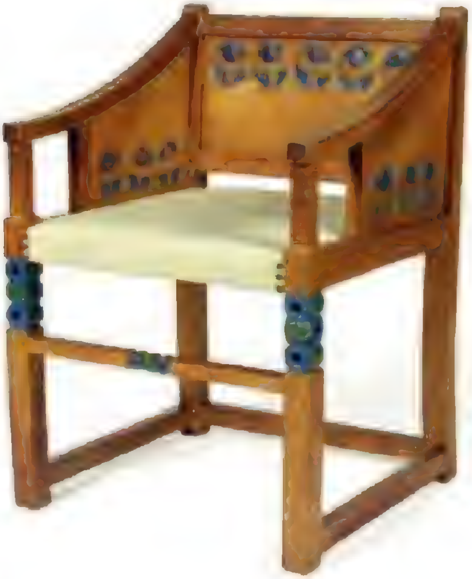
The idea of *l'art pour l'art* was viewed as reprehensible and inextricably linked to the academic tradition. In their opinion, art ought to serve and be subordinate to reality. Influenced by contemporaries and friends, and authors such as Dostoevsky, Tolstoy and Turgenev, they attempted to place their art in the service of the community. To reinforce their ideas, the group, which called themselves *Peredvizhniki* (The Itinerants), organized travelling exhibitions that were shown in rural areas. The painters also took their inspiration from this same countryside.

Moscow was the centre of this neo-nationalist movement, where rich merchants such as P.M. Trechakov arose as patrons of the arts. However, one of the people most influential for the arts in Russia was Savva Mamontov, an entrepreneur whose achievements include building the first railway between Archangelsk and Murmansk. In 1870 he bought the country estate of Abramtsevo, which would become a refuge for artists in subsequent years. In addition, the estate acquired a prominent role in the life of the surrounding community: a hospital was built, and also a school, the first one in the region. One of the most famous artists to stay at the colony was the painter Ilya Repin, one of the second generation of nationalist painters. Princess Maria Tenicheva, the wife of Prince Viatsheslav Tenichev, a rich entrepreneur who was responsible for the introduction of the electricity and car industries in Russia, also visited the estate regularly. In 1885, however, friction arose between the Princess and Mamontov, and the differences in opinion eventually led to her departure. In 1894, thanks to the fortune that her husband had amassed, she obtained the opportunity to give shape to her own ideas on modern art when she bought the Flenovo estate in the small town of Talashkino. The most influential artists' colony in Russia would arise here. Here, artists evoked folklore themes and narratives to an even greater extent than in Abramtsevo. Nikolai Roerich was the pre-eminent source of inspiration here. He was also the artist who helped Stravinsky to compose his great masterpiece *Le sacre du printemps*, which was largely written in Talashkino.



Alexei Prokofievich Zinovjev or Maria Tenicheva, chair, approx. 1900
Inv. no. 20032080
Wood
45 × 119.5 × 46 × 48.5 cm

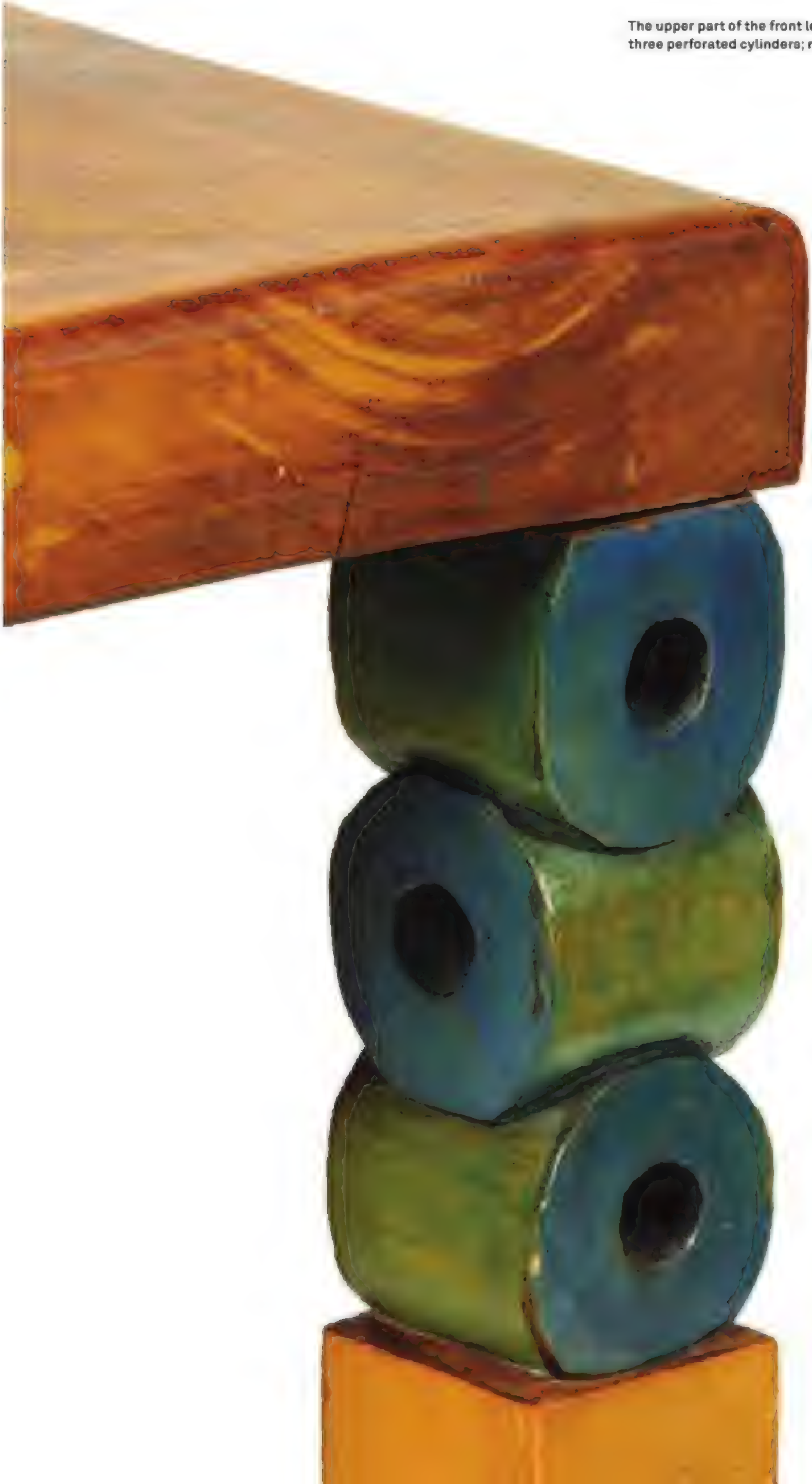
A chair from the Talashkino collection with a high back, and a lacquered satinwood seat with a half-lapped joint in the solid, continuous backrest, reinforced by large flat dowels. The front legs and framework make use of tenon and mortise connections and visible dowels. The connecting bar between the front legs and the backrest runs through the continuous backrest and is fixed by means of a cotter. The two wooden wheels turn on an axel that is accommodated in the backrest. On the top, the backrest has carving in the form of an ongoing motif of birds on blocks that is varnished green and cobalt. This is a reference to the Firebird which occurs in many Russian folk tales. The colours are also applied to the carving on the front legs, in the form of rings.

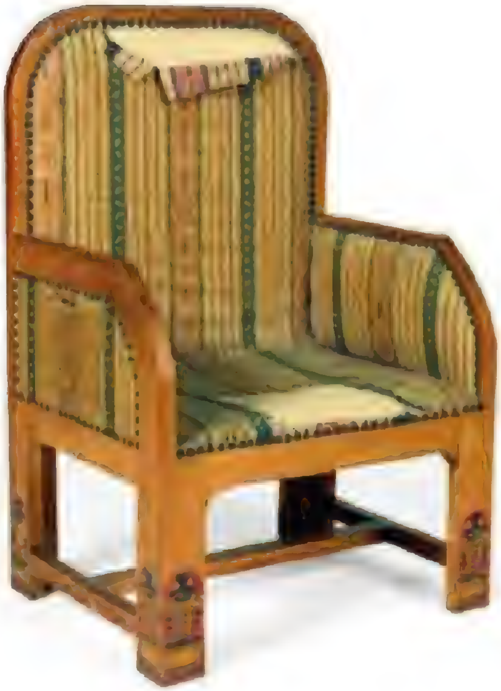


Alexei Prokofievich Zinoviev, easy chair, approx. 1900
Inv. no. 20032108
Wood
46 × 80 × 54.5 × 53 cm

A chair from the Talashkino collection with closed sides and a straight backrest. The curved armrests reach downward to the front posts that extend on through wooden, hollow, nut-shaped blue and green blocks to finally form the legs. The backrest and the closed sides are decorated with a smooth pattern of stylized circular floral motifs that are partly cobalt-coloured. Green and cobalt have also been used for the carving on the front legs, in the form of rings.

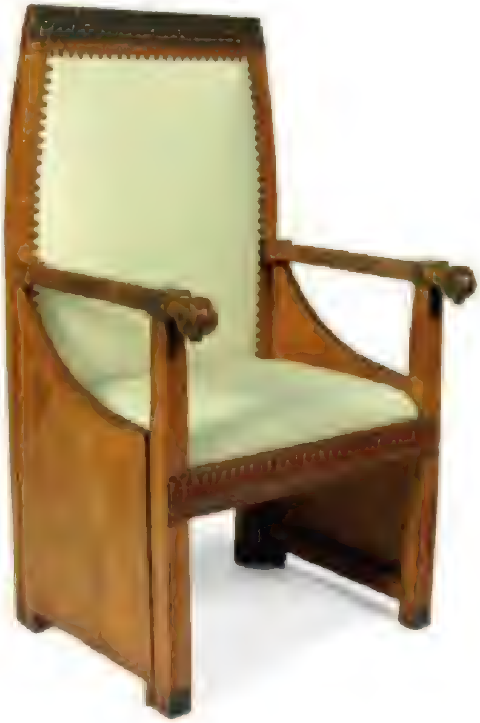
The upper part of the front leg, in the form of three perforated cylinders; no. 20032080.





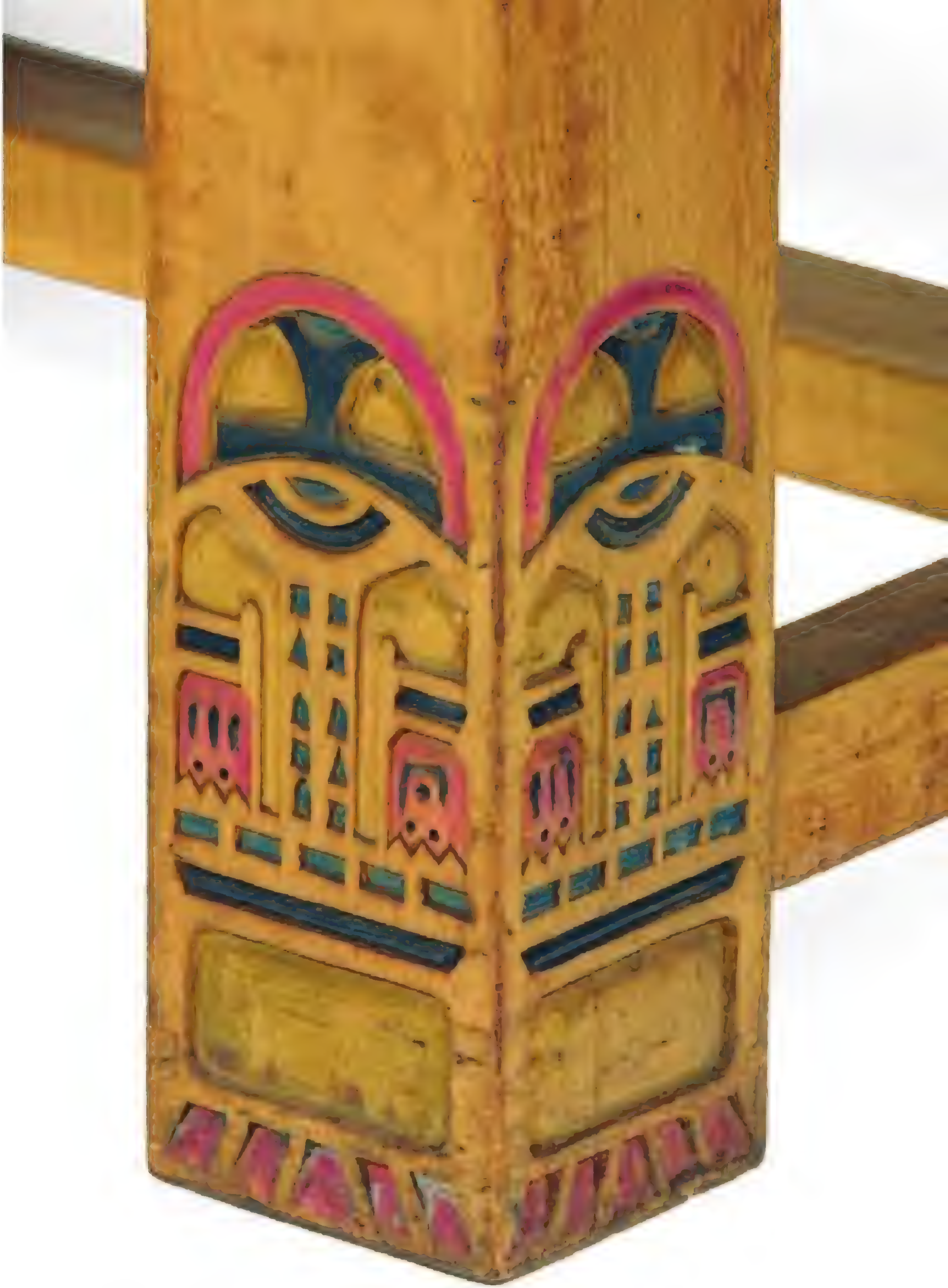
Alexei Prokofievich Zinoviev or Maria Tenicheva, easy chair, approx. 1900
Inv. no. 20032079
Wood, upholstery
35.5 × 98 × 62 × 50 cm

A chair from the Talashkino collection with a low seat and armrests. The chair has a clear-varnished satinwood frame with tenon and mortise connections. The rounded segments were produced by joining small pieces of wood and sawing them in such a way that they were all rounded off. The smooth carving, with its geometric and primitive shapes, is pink, black and cobalt coloured. The seat consists of webbing on the frame. The printed cotton has been attached by means of decorative nails, while the back and armrests are also upholstered with the same material on the interior.

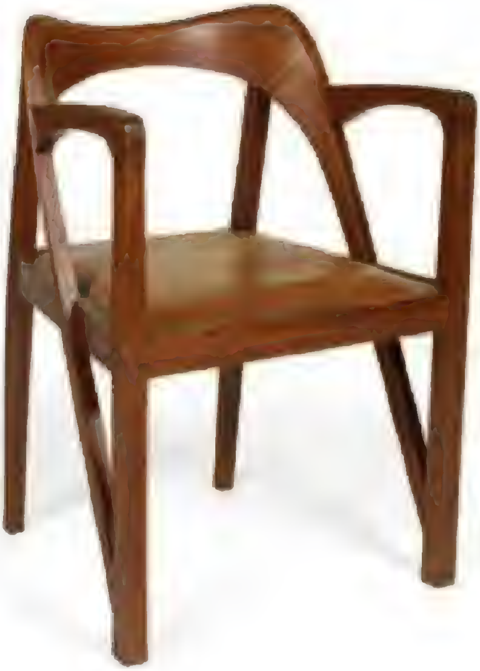


Alexei Prokofievich Zinoviev or Maria Tenicheva, easy chair, approx. 1900
Inv. no. 20032193
Varnished wood, upholstery
44 × 110 × 60 × 55.5 cm

A chair with a tapering high backrest and arms. The satin wood frame is waxed and was constructed using tenon and mortise connections, reinforced with wooden dowels. The wooden side panels were inserted into grooves in the vertical supports of the arm rests. The armrests of this chair have rounded carvings and end in a scroll. The top bar of the backrest, the joint of the armrest and post, the front bar of the seat, the underpiece of the front legs all have smooth geometric carving that is varnished blue and terra-cotta. A plate has been inserted into the frame of the backrest, to which cotton wadding has been attached by means of bronze clouts at the front, while a natural-coloured striped fabric has been attached in the same way at the front side and rear side. The separate cushion consists of a lattice work, webbing, jute, horsehair, cotton, and silk upholstery that has held in place by nails underneath.



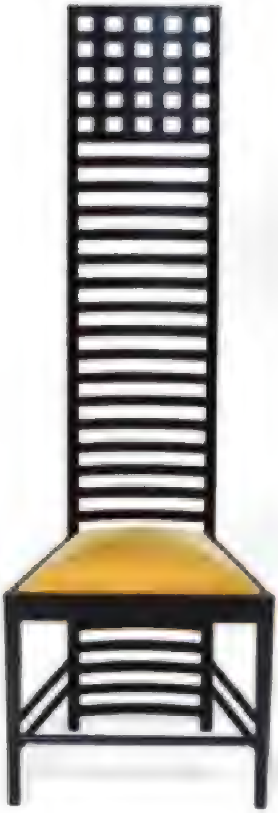
The carving on the right-hand front leg; no. 20032079.



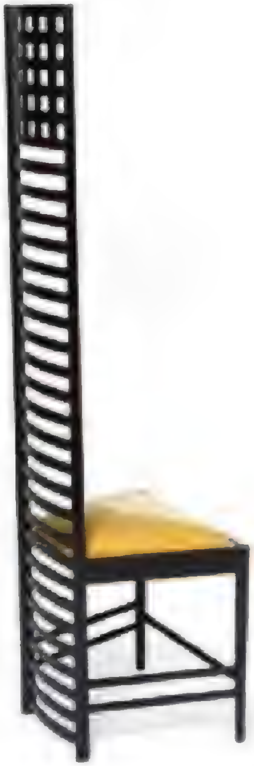
Unknown, chair, 1900–1910
Inv. no. 20032152
Wood; leather
46.5 × 83 × 57 × 52 cm
Unknown
Lit.: W. Nerdinger (ed.), *Richard Riemerschmid vom Jugendstil zum Werkbund*, Munich 1982, pp. 142, 144; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 85

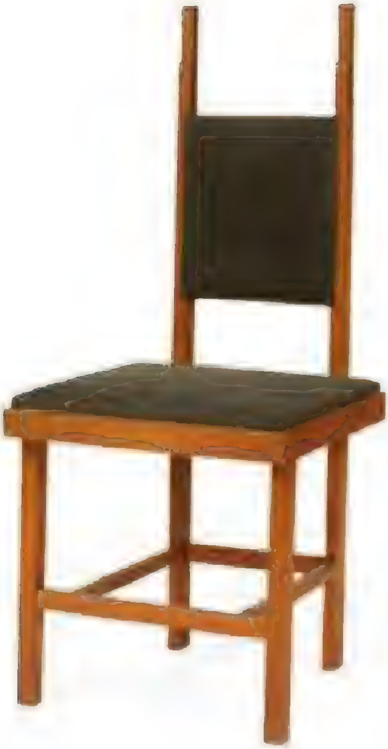
This chair with a high seat and armrests consists of a wooden frame in which the diagonal connection of the backrest with the front legs is a particular feature. The curved backrest and armrests have been cut to shape. The actual wood joints are invisible. The seat is slightly elevated due to the stuffing, and is upholstered with leather.

This chair is a copy of the chair that Richard Riemerschmid designed for the Musiksalon at the 'Deutsche Kunstausstellung' in Dresden in 1899. This design was such a major public success that the model was immediately put into production by *Vereinigte Werkstätten für Kunst und Handwerk* in Munich. One year after its presentation in Dresden, the 'Musikzimmer' Chair was also manufactured and sold by the British company *Liberty*. Many small-scale furniture workshops that wished to participate in this success made copies of Riemerschmid's model. The chair in the collection is an example of this. It was probably manufactured by a Dutch furniture-maker. In the details and the backrest, the chair deviates from Riemerschmid's example.



Charles Rennie Mackintosh, chair (*Hillhouse Chair*), design 1903–1904, object after 1973
Inv. no. 20032013
Wood; upholstery
45 × 140 × 41 × 36.5 cm
Unknown; Casina, Meda (from 1973 onward)
Lit.: H. Kimura (ed.), *Charles Rennie Mackintosh* (Progress Architecture; 50), Tokyo 1984, p. 54

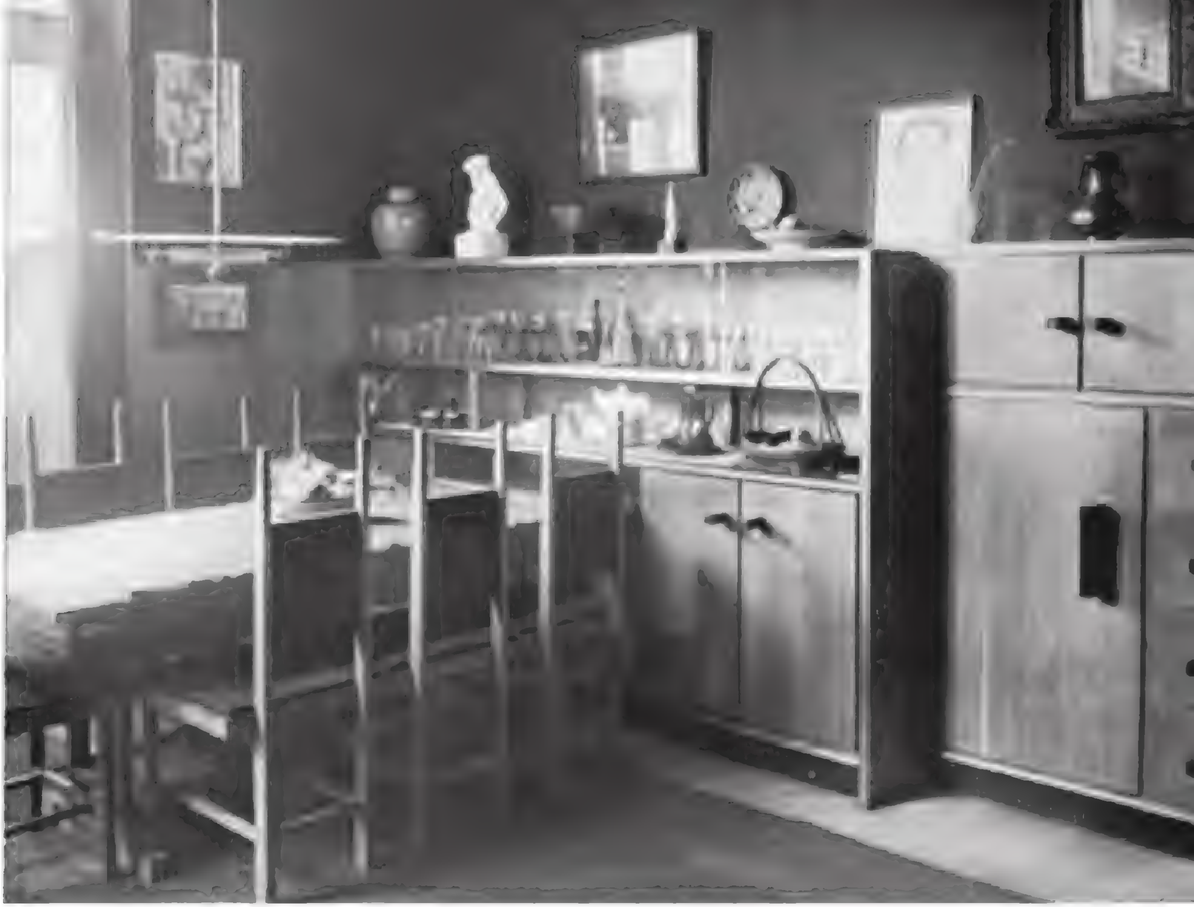




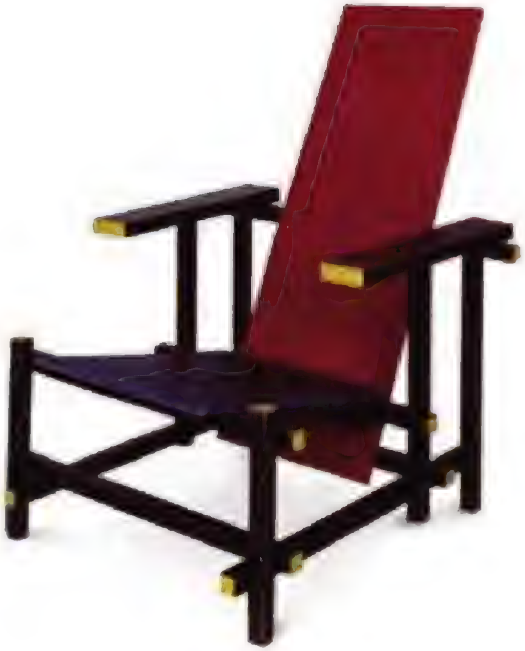
Jan Wils, chair, approx. 1925
Inv. no. 20032240, 20070025
Oak; jute, horsehair, dark-grey textile
49.5 × 96.5 × 45 × 49 cm
Unknown
Lit.: P. Bromberg, *Het Hollandsche Interieur*, Amsterdam 1931, p. 52; T. de Rijk, *De Haagse Stijl. Art deco in Nederland*, Rotterdam 2004, pp. 59, 62
Loan from the NAI

The frame of this chair consists of an oak construction with tenon and mortise joints. The back posts extend up beyond the surface of the backrest. The upper part of these posts is reduced. The back crossbar of the seat is embedded in the back posts, and the lower parts of the legs are connected by rungs. All the wooden parts are rectangular in cross-section, which simplified mechanical production. The sections are mutually connected by means of wood joints. The seat, slightly raised, is upholstered with dark-grey, soft textile.

This chair was part of a suite consisting of a table and nine chairs. The square corners, the protrusion of the back posts, and the free placement of the seat display the influences of *De Stijl* movement and Frank Lloyd Wright. The result is a slender and abstract interpretation of the traditional dining chair.



The chair in the dining room of a house in Amsterdam, designed by Jan Wils. Source: P. Bromberg, Het Hollansche Interieur, Kosmos, Amsterdam 1931, p. 52.



Gerrit Thomas Rietveld, easy chair (*Red and Blue Chair*) design 1918–1923, object from the 1950s
Inv. no. 20032016
Pine, plywood
32 × 87 × 66 × 86 cm
Unknown (originally G. van de Groenekan; Cassina, Meda from 1973 onward)
Lit.: T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, pp. 3, 17; D. Baroni, *I mobili di Gerrit Thomas Rietveld*, Milan 1977, pp. 48-49; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib.cat. Centraal Museum, Utrecht 1992, pp. 74-76; Peter Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 50-51, 58-59

An easy chair with a low seat and armrests. The chair has a black-varnished pinewood framework that is connected by means of dowels. The ends are painted yellow. The black-varnished armrests, the blue-painted plywood seat and the red-painted plywood back have been attached to the frame by means of angular brackets.

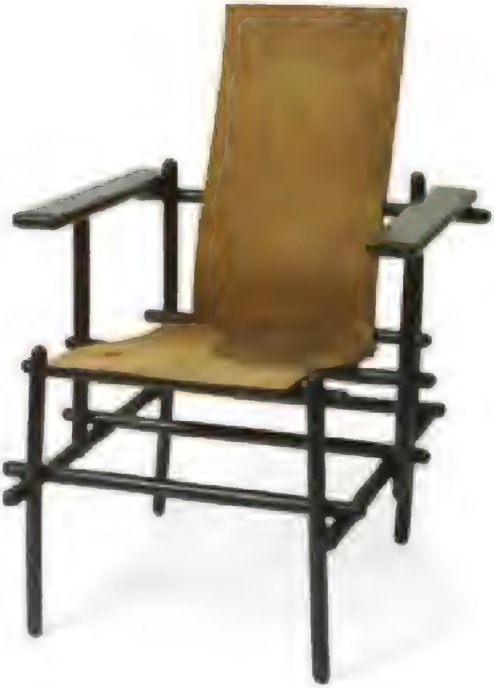
In 1919, a year after Rietveld had set up business as an independent furniture maker on the Adriaen van Ostadelaan in Utrecht, he became acquainted with *De Stijl* movement via architect Robert van 't Hoff and the founder of *De Stijl* Theo van Doesburg. Rietveld had just finished his first prototypes of his renowned *Red and Blue Chair*. In a letter to Van Doesburg, he wrote that his aim was to create a chair without mass or volume, one that did not enclose any space but allowed it to continue uninterrupted, like a marking in a three-dimensional Cartesian grid. This goal was achieved by having the slats of the chair pass one another at the constructive joints and terminate a few centimetres further, instead of exactly fitting together at that point. The slats remained intact, and only the interfaces when the three slats came converged were connected by means of dowels. As a consequence, an invisible yet strong connection between the wooden slats was created. Many historians have wondered where Rietveld obtained the inspiration for this construction. The surmises range from simple medieval furniture to the construction of building scaffolding, which is made by connecting horizontal and vertical beams. Traditionally these were connected by means of rope, which meant that the ends had to extend further than the connections so that the rope could gain a good grasp. Bamboo is also bound in this way.

The first prototypes had an extra surface on either side of the seat, occasionally rectangular and occasionally with a bevelled corner, parallel to the seat. These side panels were later omitted. In the early years, the chair was always lacquered or painted in a monochrome colour. In 1923, the chair was assigned its renowned primary colour scheme, so that the spatial effect was considerably reinforced. The planks – which were black themselves – were given yellow ends so that these planks were thus defined as a part of a longer whole. The choice of these particular colours was inspired by Gestalt psychology, a theory that had originated in Germany and was becoming popular in the Netherlands at that time. The entire unit of yellow squares, blue seat and red backrest calls to mind the paintings of El Lissitzky and Mondriaan, both of whom were associated with *De Stijl*.

'Ruimte-Kleur-Compositie in grijs voor Til Brugman, Den Haag 1924.' (Space-Colour Composition in grey for Til Brugman, The Hague). Photo of scale model of an interior design with furniture by Rietveld and a colour scheme by Vilmos Huszár. The white version of the Red and Blue Chair is shown in the rear left-hand corner. Source: Centraal Museum Utrecht.

G.T. Rietveld, tubular steel variation on the *Red and Blue Chair*, 1930

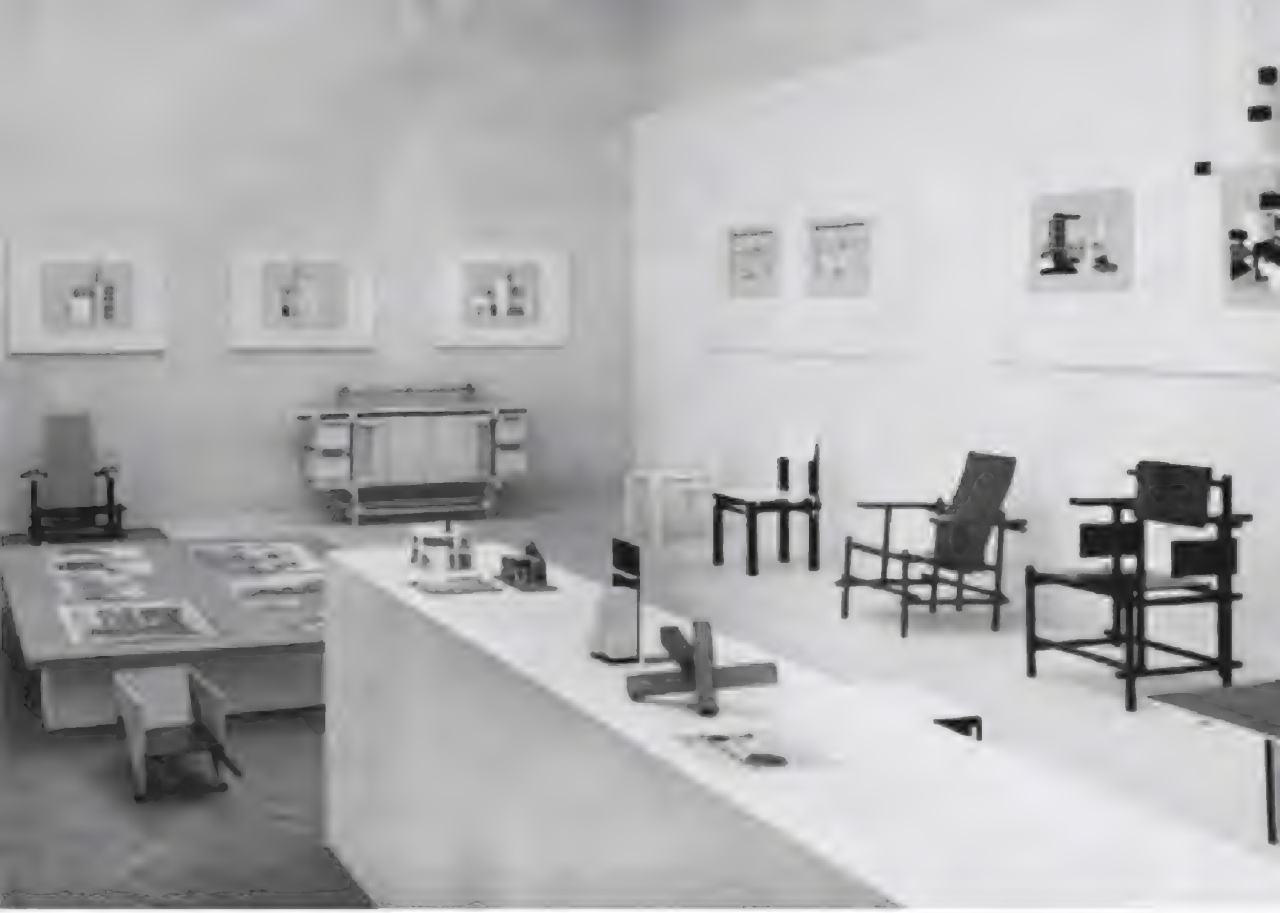
Constructive principle of the Red and Blue Chair: the overlapping bars are connected by dowels. The first two dowels can be inserted blind, the third is driven in from underneath (see arrow).



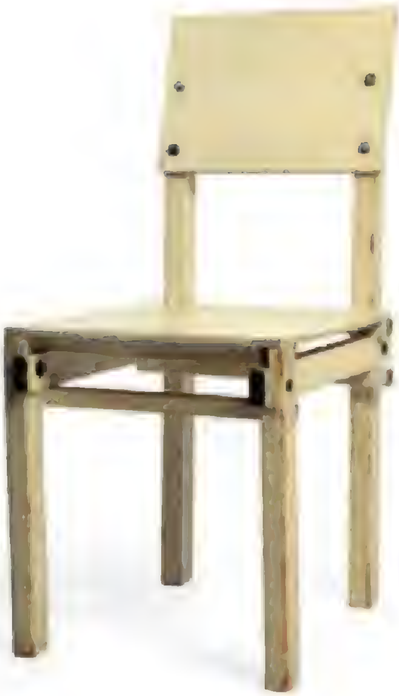
Gerrit Thomas Rietveld, easy chair (*Stick Chair*), 1924
Inv. no. 20032024
Varnished oak; chamois
45.5 × 93 × 71 × 72.5 cm
G. van de Groenekan
Lit.: T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, p. 31; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib.cat. Centraal Museum, Utrecht 1992, p. 104; J. Creman, 'Rietveld's stokkenstoel', in: H. Piene (ed.), *Meubels uit de vorige eeuw, restauraties uit deze eeuw*, Stichting Ebenist, Amsterdam 2003, pp. 49-50; P. Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 64-65
Donation from G.T. Rietveld, 1964

A chair consisting of black-varnished oak rods and flat armrests. The high seat and the backrest are made in the form of curved oak boards whose sides are varnished black, while the surface is covered with natural chamois. The construction is probably connected by means of wooden dowels, as no connection is visible. The use of round wood is rather uncommon for Rietveld, appearing on only one other occasion with the so-called *Rechte stoel* (Straight Chair), which is only known from a photograph.

In 1924, Rietveld created a chair for the Amsterdam pharmacist Birza. In terms of structure, this chair is similar to the *Red and Blue Chair*. Here, the rectangular slats have been replaced by round rods, which is not particularly beneficial for the stability. The overlap of the various construction sections is not large enough, so that the chair is shaky. The curved backrest and seat give the chair an elegant, less austere character than the *Red and Blue Chair*. Five examples of this chair were made: three in brown, one of which has a place in the Faculty of Architecture's collection, and two black ones, both of which came from Birza's interior. One of these two was missing without a trace for years, until it was found during a broadcast of the television programme *Tussen kunst en kitsch* (a programme in which the public can ask experts for an evaluation of objects) in 2000. The chair was owned by someone who had bought it at a second-hand market in Bodegraven for 25 guilders (12 Euro) five years previously. After restoration, the chair was valued at 125,000 guilders (55,000 Euro). This story is typical of the interest in the work of Rietveld, which has been growing steadily since the eighties.



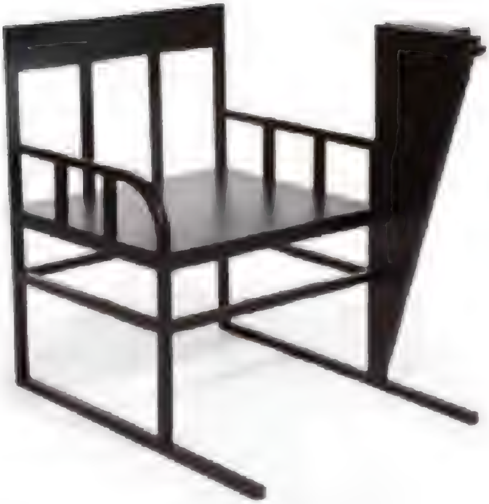
Rietveld exhibition, Amsterdam 1950.
Source: Rietveld Archives, NAi.



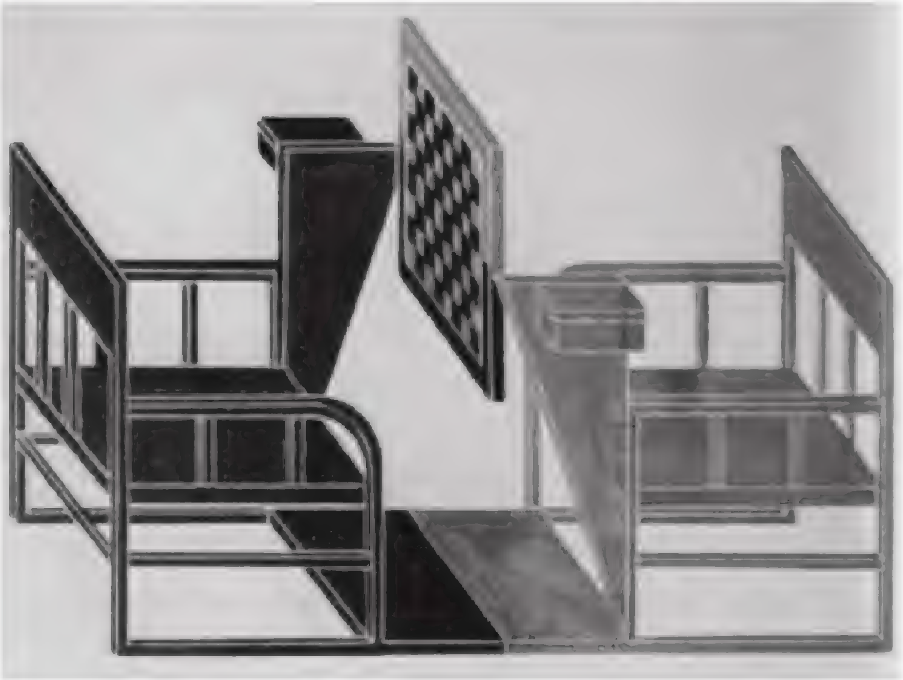
Gerrit Thomas Rietveld, chair (*Military Chair*),
design 1923, object possibly after 1923
Inv. no. 20032054
Pine and lacquered plywood
45 × 89.5 × 40.5 × 52 cm
G. van de Groenekan; Bijlsma, Franeker
(from 2005 onward)
Lit.: T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, p. 19; D. Baroni, *I mobili di Gerrit Thomas Rietveld*, Milan 1977, pp. 70-71; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib.cat. Centraal Museum, Utrecht 1992, p. 93; P. Vöge: *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 62-63
Donation from G.T. Rietveld, 1964

The 'military' straight chair with a high seat. Semi-matt white-painted pinewood chair with shiny black-painted coach bolts and frame ends. The most important joints of the framework are connected by means of coach bolts, while the rest is nailed together. The seat and the backrest are made of 12-mm plywood, fixed by means of coach bolts in the case of the backrest and by nails in the case of the seat.

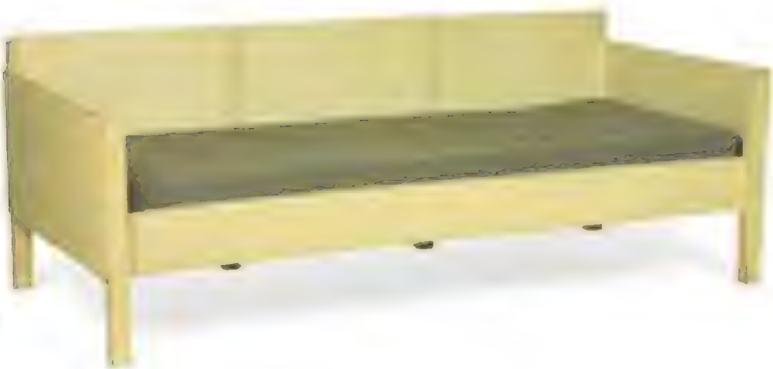
In 1923, when Rietveld applied his subsequently famous colour scheme to the *Red and Blue Chair*, he also designed a chair, a stool and a table for the Catholic Military Home in Utrecht. This furniture is referred to as his 'military series'. Here, he abandoned his well-known construction. In the chair, the horizontal beams and the legs are connected by means of an overlapping joint of 1.5 cm. This joint is fixed by a screw that is fully visible. The accompanying table has the same construction principle as the chair. An example of this table is a part of the interior of the Rietveld-Schröder House. Two years later, Rietveld designed another chair with armrests that is based on the same principle as the *Military Chair*, but this later model is much more comfortable due to the armrests, the higher backrest and the deeper seat. In 1926 (or later, in view of the fact that the drawings are not dated), Rietveld designed another variant of the *Military Chair*. This is even simpler in its construction. Only the drawings but no actual chairs are known, and there are also other designs that elaborate on the military theme but have never been implemented.



Alexander Michailovich Rodchenko, chess chair, design 1924, object 1969–1970
Inv. no. 20032140, 20032138
Wood, lacquered in red and black
40 × 80 × 67.5 × 85 cm
Workplace of the Faculty of Architecture, TU Delft
Lit.: J.F. Starr & J-L. Cohen, *K. Melnikov. Le pavilion soviétique*, Paris 1981, p. 96; G.I. Garrido Colmenero, *Melnikov en Paris. Del pabellón soviético a los garajes*, Madrid 2004, p. 192
Designed for the interior of Melnikov's Soviet pavilion at the Exposition Internationale des Arts Décoratifs et Industriels Modernes in Paris in 1925.



Alexander Rodchenko, Chess ensemble for the interior of the Workers' Club in the Soviet Pavilion, Exposition des Arts Décoratifs, Paris 1925. Source: S. Frederick Starr, *K. Melnikov, Le pavillon Soviétique*, Officina Edizioni, Rome 1979, fig. 63.

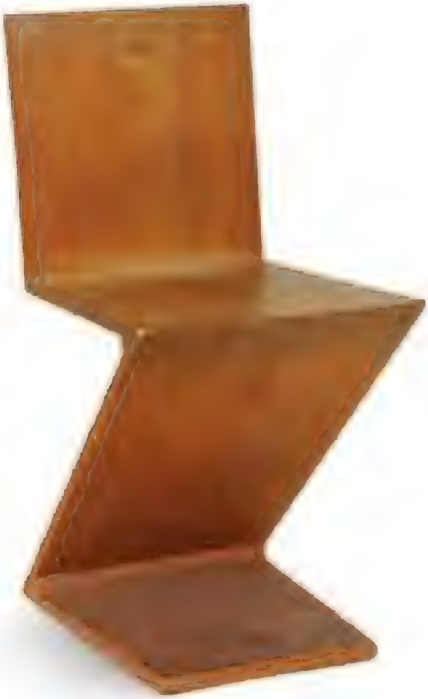


Robert van 't Hoff, divan, 1918
Inv. no. 20032252
White-lacquered wood;
cushion covered with grey textile
41 × 69 × 190.5 × 83 cm
Unknown
Lit.: D. Baroni, *I mobili di Gerrit Thomas Rietveld*,
Milan 1977, p. 33
Loan from the NAi.
Donation, originating from Samuel Goudsmit.

Three-seater with separate cushion, four rear legs and two front legs, all of which have a square cross-section. The other components are slotted into the wood and were probably painted over later.

This divan, designed in 1918 by Robert van 't Hoff, one of the founders of the *De Stijl* movement, can be regarded as one of the earliest items of furniture to be designed in accordance with the ideals of this group. Instead of allowing two surfaces to come together remotely, Van 't Hoff designed the corners as a gradual build-up of encounters between horizontal and vertical components. This communicative corner structure was inspired by the work of the American architect Frank Lloyd Wright, whom he had met during a trip through America in 1914. Wright had significant influence on Van 't Hoff, and other members of *De Stijl* also recognized the innovative contribution Wright made in the field of spatial design.

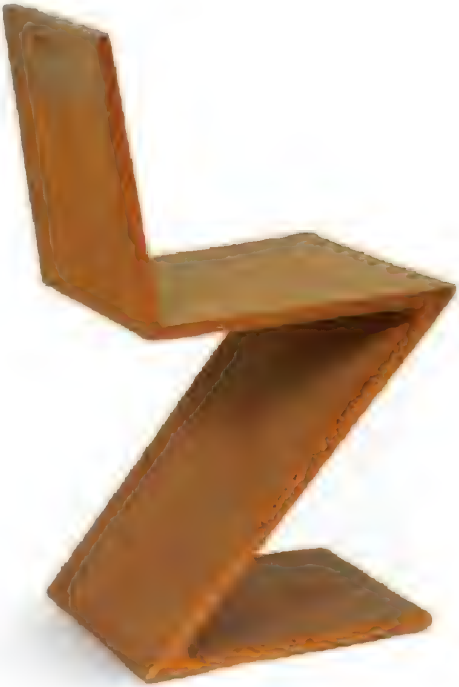
Although the work of Van 't Hoff was much published in the early years of *De Stijl*, he resigned from the group in 1919. He believed that the ideals of the movement had little chance of being realized in the near future. He had regarded *De Stijl* primarily as a way of initiating a communist revolution via non-figurative representation, both in the domain of the visual arts as in society itself. When the Russian Revolution did not catch on in the rest of Europe, Van 't Hoff withdrew. He scarcely designed anything after 1920, and he left the Netherlands definitively for the United Kingdom in 1937.

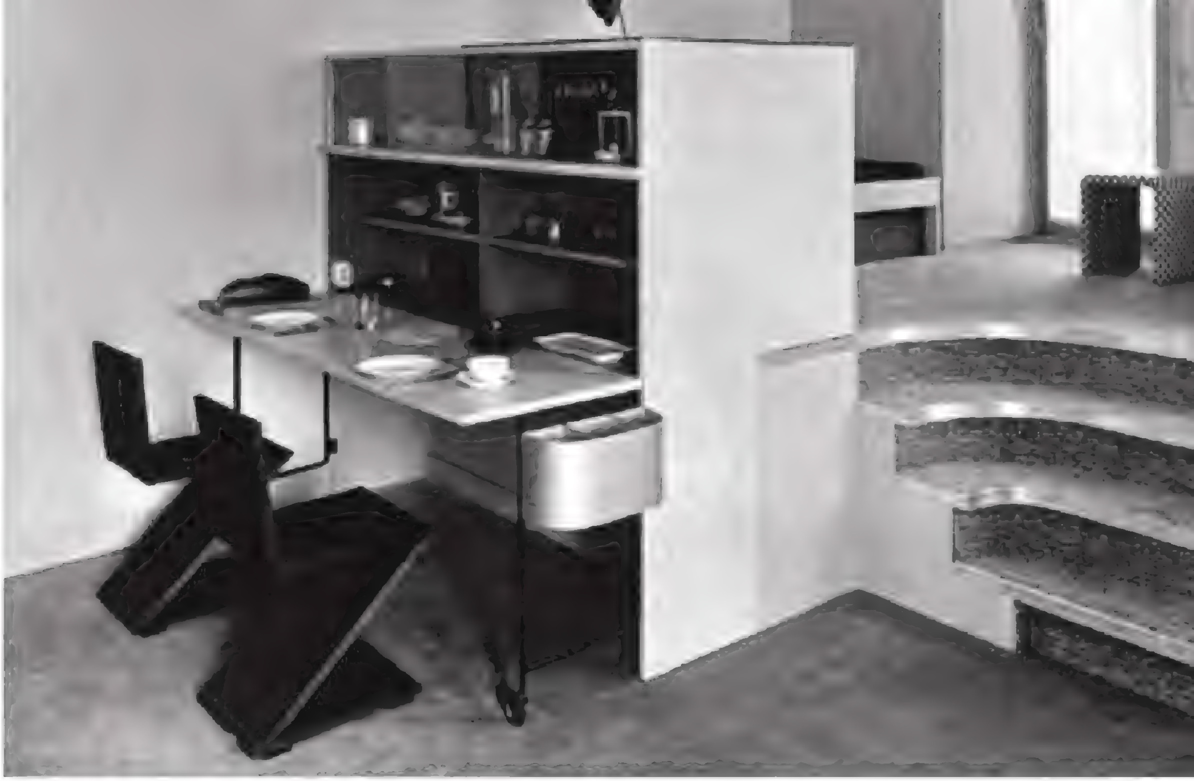


Gerrit Thomas Rietveld, chair (*Zigzag Chair*), design 1932–1934, object from the 1950s
Inv. no. 20032040
Wood
46 × 78 × 39 × 45 cm
G. van de Groenekan (Metz & Co., Amsterdam 1935–1955); Cassina, Meda (from 1973 onward)
Lit.: T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, p. 73; D. Baroni, *I mobili di Gerrit Thomas Rietveld*, Milan 1977, pp. 130-137; M. Küper & I. van Zijl: *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib.cat. Centraal Museum, Utrecht 1992, pp. 145-147; P. Vöge: *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 82-87
Donation from G.T. Rietveld, 1964

The chair has a high seat, no armrests, and consists of solid elm components 18 mm thick, glued to one another. The backrest and the seat are connected by means of dovetail joints. The rest of the angled joints consist of components that have been sawn as mitre joints and are interconnected by means of bolts and a triangular reinforcement slat.

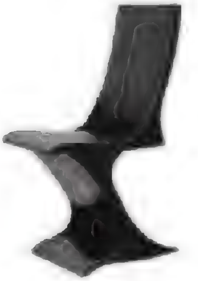
It can be regarded as an exceptional achievement on the part of Rietveld to design a chair made of traditional material that immediately became a modern classic, at a time in which most designers were focused on the application of all kinds of tubular steel connections. Part of the success of the chair can be explained by the fact that the construction of the sharp angles was a feat of genuine craftsmanship that nevertheless did not appear traditional. The original intention was not to create a wooden chair. The first version of the *Zigzag Chair* consisted of a steel frame over which a single fibre plate had been folded. However, the fibre was not strong enough to endure the forces on the corners, so that it began to show cracks. In a second prototype, which must have originated around the same time according to Küper and Van Zijl, wooden planks were screwed in-between two steel strips sawn to size. The final version of the *Zigzag Chair* is made completely of wood, which meant that the properties of the material had to



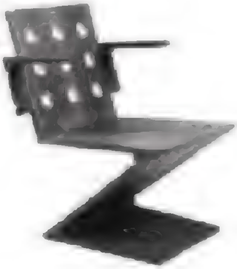


The Zigzag Chair produced by Metz & Co. in a dining room by Rietveld. Source: W. Retera, *Het Moderne Interieur*, Kosmos, Amsterdam 1937, p.113

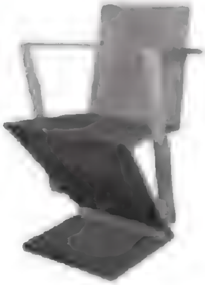
be used to the limit. Enormous forces had to be absorbed at the corners, on a small surface. The way in which these corners had to be constructed was initially a great point of discussion between Rietveld and his assistant Van de Groenekan. A number of solutions were conceived, including a system with screws that converge in a tripod tube. They ultimately decided to use a construction in which an extra wooden wedge was glued in the corner, so that the torque in the corners was reduced. In the course of time, the *Zigzag Chair* has become an icon of minimalist design, acclaimed by artists such as Donald Judd, who often used the chairs at tables and desks that he had designed himself.



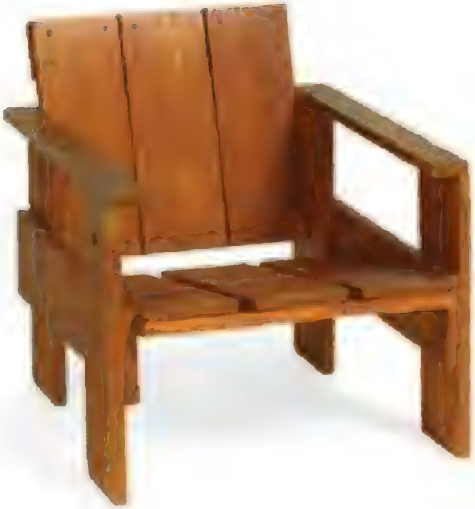
Heinz and Bodo Rasch, *Sitzgeiststuhl*, 1927. Is mentioned as the inspiration for Rietveld's Zigzag Chairs. Rietveld's second prototype in particular had a very similar construction. Source: A. von Vegesack, P. Dunas, M. Schwartz-Clauss (eds.), *100 Masterpieces aus der Sammlung des Vitra Design Museums*, 1996, p. 112.



G.T. Rietveld, *Zigzag Chair* with short armrest and holes in the back, 1938



G.T. Rietveld, *Zigzag Chair* with armrest connected to the foot, 1942

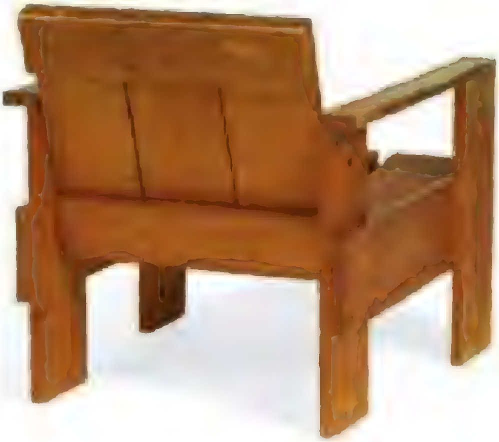


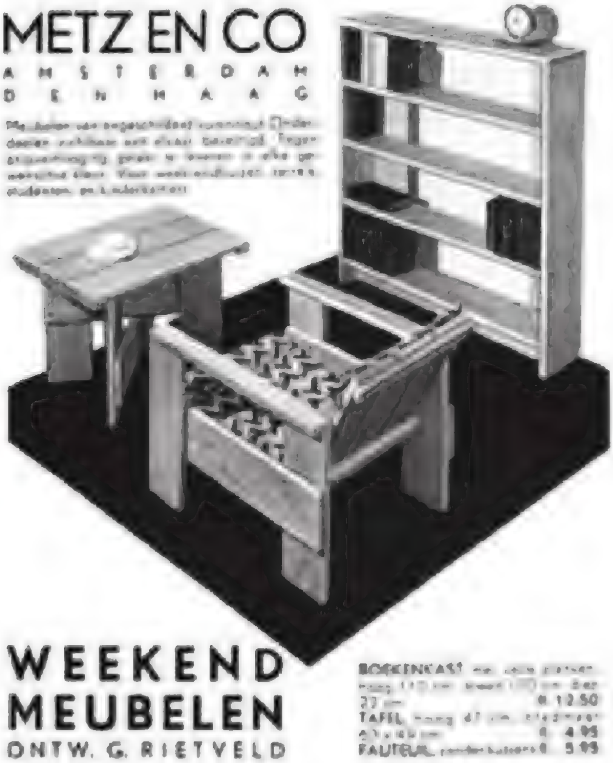
Gerrit Thomas Rietveld, easy chair (*Crate Chair*), 1934
Inv. no. 20032181
Pine
30 × 62.5 × 56 × 69 cm
G. van de Groenekan; Metz & Co., Amsterdam
Lit.: J. de Meijer, 'Vakverrotting', *Bouwkundig Weekblad*, 1935, no. 44, p. 463; T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, p. 70; D. Baroni, *I mobili di Gerrit Thomas Rietveld*, Milan 1977, pp. 138-141, 144-145; K. Mang, *Geschichte des modernen Möbels*, Teufen 1978, p. 96; M. Küper & I. van Zijl: *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib. cat. Centraal Museum Utrecht 1992, p. 155; P. Vöge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp. 88-89
Donation from G.T. Rietveld, 1964

Low version of the *Crate Chair*. The chair is comprised of pine boards that are connected by means of brass screws.
The *Crate Chair* was made by Rietveld's assistant Van de Groenekan. An exceptional feature of the chair is the way in which the armrests are attached: normally they were screwed to the subframe, but in this case a different construction method was chosen. Holes of two centimetres diameter were drilled in the bars of the legs. Then a hole was drilled from the top, meeting the other hole through a bolt had been inserted, and this was fixed with a nut. The advantage of this was that it was possible to tighten the bolts afterwards.

In 1934, Rietveld began experimenting with chairs made of the cheapest material that was available at that time: wood that was used to make crates. Rietveld reasoned that chairs were always packed in crates, so this material was evidently stronger than the chair itself. Wouldn't it then be a good idea to manufacture a chair from this wood? In addition, the material was cheap and could be applied to furniture without further processing.

The crate furniture clearly demonstrated Rietveld's preoccupation with standard measuring systems. The standard dimensions of the crate wood determined the composition, as it were: the width and the depth of the planks were





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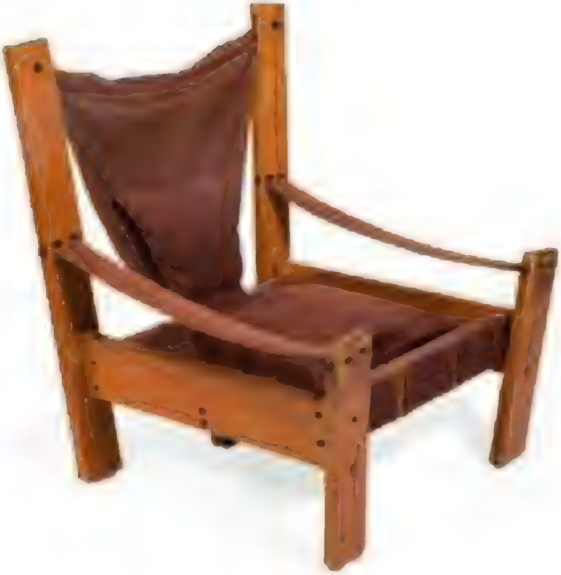
ONTW. G. RIETVELD

Metz & Co. advertisement in *de 8 en Opbouw*, 1935, no. 8

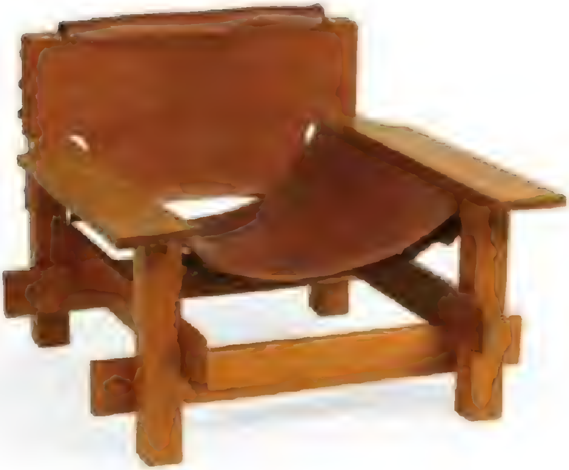
essential. No part of the chair is superfluous and each dimension of the structural parts is related to the chair as a whole. The first models were made by Rietveld himself. Shortly afterwards, the crate furniture was sold by Metz & Co as 'weekend furniture'. Some drawings suggest that they were intended to be put together by the user himself, but Metz & Co sold them fully assembled. The purchaser could obtain the furniture in any desired colour, but the screws needed to be inserted after the painting process, so that they could remain visible. This rather free manner of producing furniture was not appreciated by everyone, as a review in the *Bouwkundig Weekblad* in 1935 shows. The weekend furniture was described as 'below every professional standard'. The way in which Rietveld used the pinewood – unpainted with visible screw heads – was abhorred and was even described as 'professional rot'. A few weeks later, Rietveld himself defended his designs in this same magazine, referring to it as a construction method that 'goes straight to its goal (...) unsullied by the worrying frowns of our craftsmen'.

The fact that Rietveld had a social aim with his crate furniture is apparent. In the economic crisis of the thirties, Rietveld's crate furniture was relatively easily affordable. Rietveld himself, however, never wrote anything about the social aspect of the furniture. From his earliest days he had a clear view of life: it was important to live actively and take pleasure in the development of one's self-consciousness. This *joie de vivre* would give people the insight that the possession of property and power were unnecessary. Rietveld himself lived according to such principles. In his view, the economic crisis was primarily a way of adopting a sober lifestyle, something that could only have a positive influence on people.

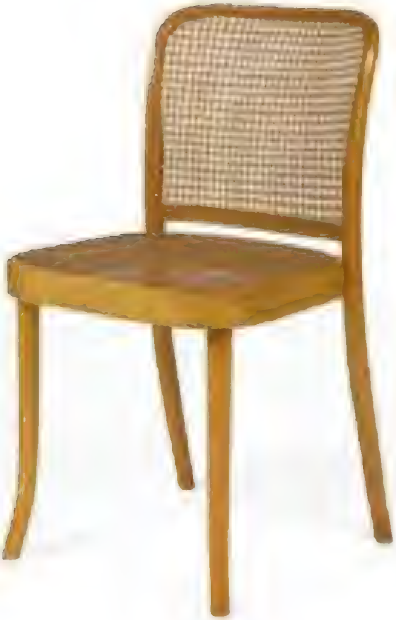
After 1935, Rietveld regularly designed furniture that resembled his crate series. Photographs show that his crate furniture was often displayed along with his later designs and with the *Zigzag Chairs*.



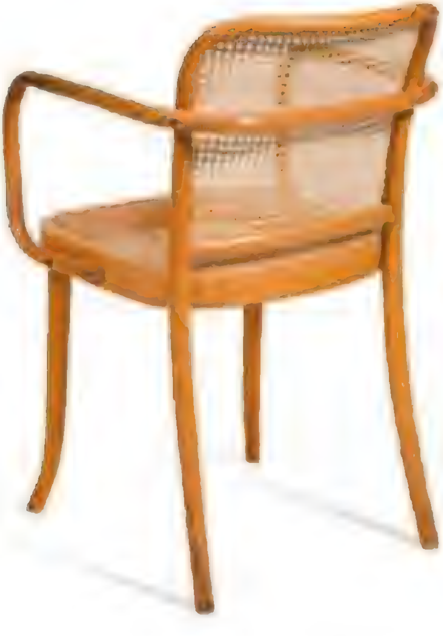
Unknown, easy chair, 1960–1985
Inv. no.20032201
Pine, clear-varnished, iron rod; canvas
31 × 90 × 83.5 × 78.5 cm
Unknown

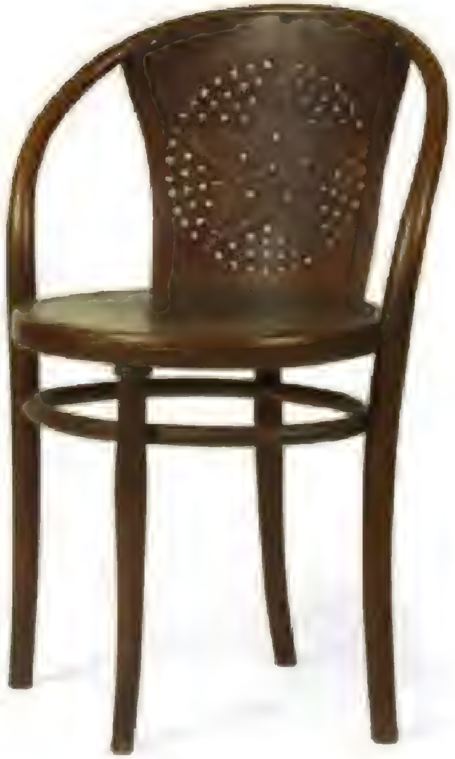


Peter de Bois, easy chair, adjustable, 1964
Inv. no. 20032204
Wood; leather
31 × 66.5 × 83.5 × 91.5 cm
Unknown
Donation from P. de Bois



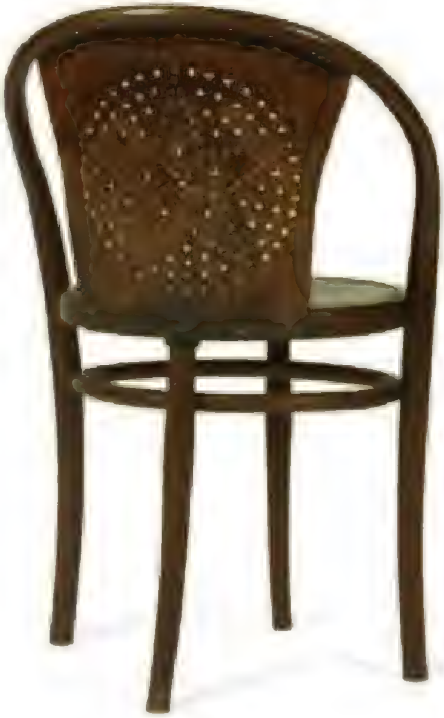
Unknown, chair, 1946–1953
Inv. no. 20032156, 20070016 with armrests
Steamed beech, clear-varnished; split cane
46.5 × 81 × 44.5 × 51 cm
Thonet, Czechoslovakia
Lit.: H. de Jong; *Stoelen*, Delft 1974, p. wood 05-08

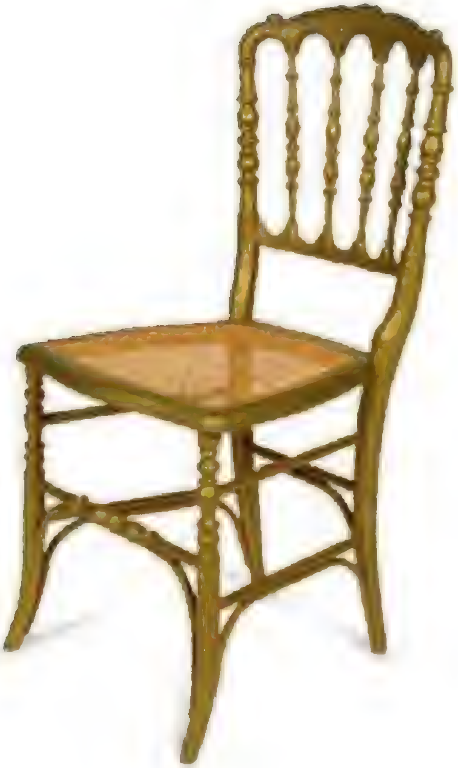




Unknown, chair, 1912–1920
Inv. no. 20032044
Beech; plywood
46.5 × 80.5 × 52 × 53 cm
Seat and back: Luterma, Estonia
Lit.: G. Candilis, *Bugholzmöbel/Meubles en Bois Courbé/Bent Wood Furniture*, Stuttgart 1980, p. 30; C. Wilk, *Thonet Bentwood & Other Furniture. The 1904 Illustrated Catalogue*, New York, 1980, p. 10

A straight chair with a high seat and round beech posts. It has been varnished dark-brown and put together by means of screws and bolts. The position of the legs in relation to the backrest is unusual: the chair has one front and one rear leg and two side legs, which also extend upward to form the backrest. The seat is made of patterned plywood and the back consists of bent perforated plywood. The difference in colour and quality between the plywood of the seat and the rest is significant. The underside of the seat bears a large stamp with the text 'Fabriqué en Estonie, LUTERMA'. Both J. & J. Kohn and Thonet display a similar model in their 1904 catalogues. The chair depicted could be a compilation of a frame from the Thonet or J. & J. Kohn factories, combined with a seat and backrest from Luterma.

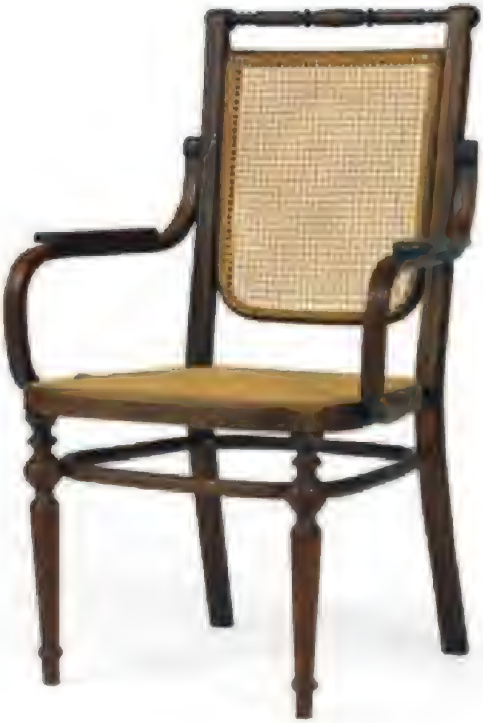




Unknown, chair, 1850–1900
Inv. no. 20032128
Wood, rattan, gilded; split cane
45 × 86 × 41 × 48 cm
Unknown
Lit.: C. Wilk, *Thonet Bentwood & Other Furniture. The 1904 Illustrated Catalogue*, New York, 1980, p. 34; J.M.W. van Voorst tot Voorst, *Tussen Biedermeier en Berlage. Meubel en interieur in Nederland 1835–1895*, Amsterdam 1992, p. 519

This gilded wooden chair consists of a framework with tenon and mortise connections. The front legs, front crossbar and posts of the backrest are of turned wood. The backrest accommodates four turned thin bars. The front and rear rungs between the legs have been additionally reinforced by means of bent cane, which is nailed to the leg and crossbar. The seat consists of split cane woven into the frame.

This model belongs to the so-called 'light chair' type of chair that became popular in European salons in the 19th century. The basis of this type was established by the *Chiavari chairs* that were produced in the fishing village of the same name in the neighbourhood of Milan in the early 19th century. The rounded corner reinforcements are uncommon for the *Chiavari chair*, and more common for chairs made of bent wood. The *Thonet* company displayed a very similar chair, model 246, in its catalogue of 1904. However, this chair misses the horizontal rungs between the legs which are so characteristic of the *Chiavari chair*. It is impossible to say who the true manufacturer was because similar models were produced by numerous furniture-makers.

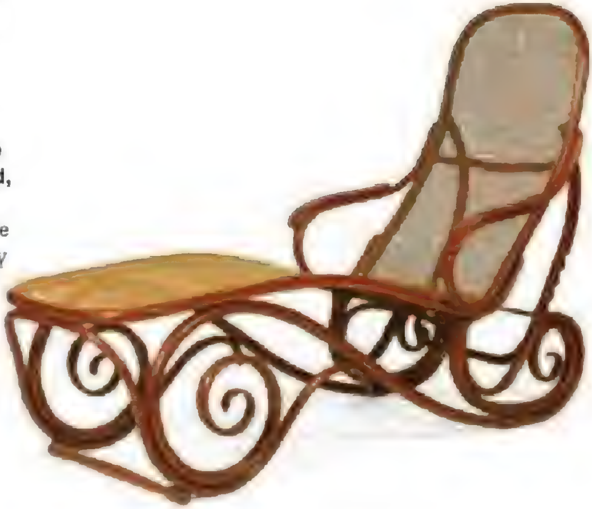


Unknown, chair with armrests, before 1904
Inv. no. 20032189
Steamed beech; cane pulp
42 × 96.5 × 58.5 × 57.5 cm
Thonet, Vienna, model 1044
Lit.: C. Wilk, *Thonet Bentwood & Other Furniture. The 1904 Illustrated Catalogue*, New York, 1980, p. 9

A chair with a high seat and armrests. The frame is made of dark-varnished beech. The turned front legs and the upper crossbar are fixed with dowels to the chair rod and the post respectively. The crowns of the armrests are also attached by means of dowels to the armrests, while the seat frame is bolted to the rear legs. The other posts and bars have been bent into the appropriate shape, and the joints are connected by screws. The backrest and the seat consist of split cane woven into the holes in the frame.

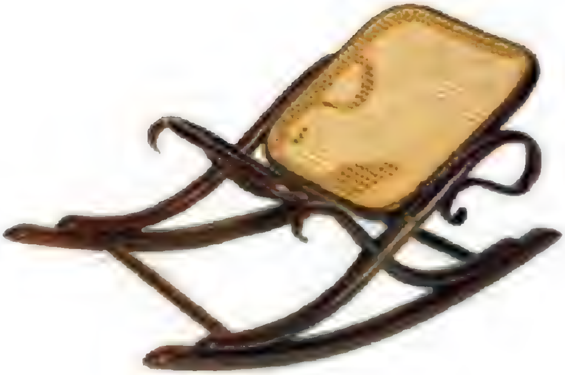
Unknown, chaise longue, before 1904
Inv. no. 20032239
Steamed beech; split cane
35 × 112 × 68 × 45 cm
Thonet, Vienna, model 9702
Lit.: C. Wilk, *Thonet Bentwood & Other Furniture. The 1904 Illustrated Catalogue*, New York 1980, p. 74; G. Candilis, *Bugholzmöbel/Meubles en Bois Courbé/Bent Wood Furniture*, Stuttgart 1980, p. 88
Accompanying footrest inv. no. 20032164.

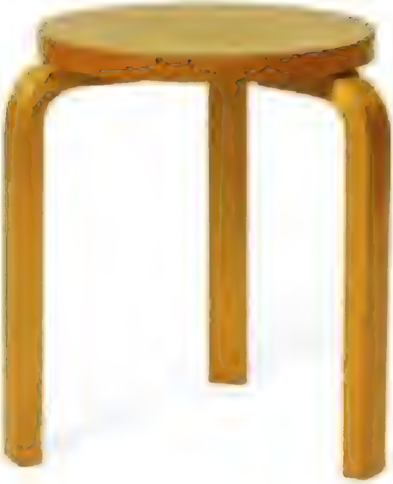
The components of the frame of the chaise longue consist of bent, dark-varnished beech round wood, and are mutually connected by means of screws. The seat and back comprise woven split cane. The backrest is adjustable and is linked to the seat by a piano hinge. The Thonet emblem is engraved under the front crossbar.



Unknown, footrest, before 1904
Inv. no. 20032164
Steamed beech; split cane
33.5 × 33.5 × 43 × 75 cm
Thonet, Vienna, model 7002
Lit.: C. Wilk, *Thonet Bentwood & Other Furniture. The 1904 Illustrated Catalogue*, New York, 1980, p. 53
Accompanies the Thonet chaise longue inv. no. 20032239.

A footrest consisting of bent beech round wood, varnished dark brown, assembled by means of screws, bolts and glue. The top surface, for the legs, is made of woven split cane. The footrest can also rock to and fro.



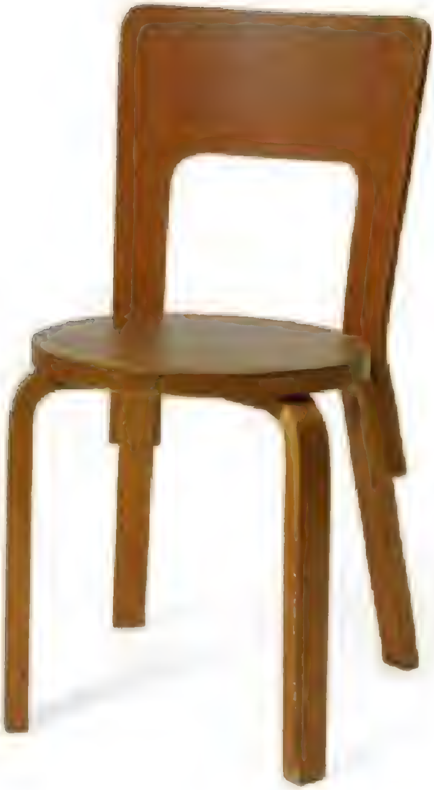


Alvar Aalto, stool, design 1933, object after 1935
Inv. no. 20032130
Birchwood
44 × 44 × 39 × 39 cm
O.Y. Huonekalu-ja, Turku; Artek, Helsinki, model 60 (from 1935 onward)
Lit.: K. Mang, *Geschichte des modernen Möbels*, Teufen 1978, p. 135; W. Blaser, *Alvar Aalto als Designer*, Stuttgart 1981, pp. 95, 105; J. Pallasmaa (ed.), *Alvar Aalto Furniture*, Helsinki 1984, pp. 95, 126, 142; T. Kellein (ed.), *Alvar & Aino Aalto Design*, Ostfilden-Ruit 2004, pp. 90-91

Stool of birchwood and birch veneer. The legs are made of solid wood that has incisions at the curve and is filled up with layers of veneer so that it can be bent. The seat of the stool consists of wood, with a layer of veneer above and below. The legs are connected to the seat by means of screws.

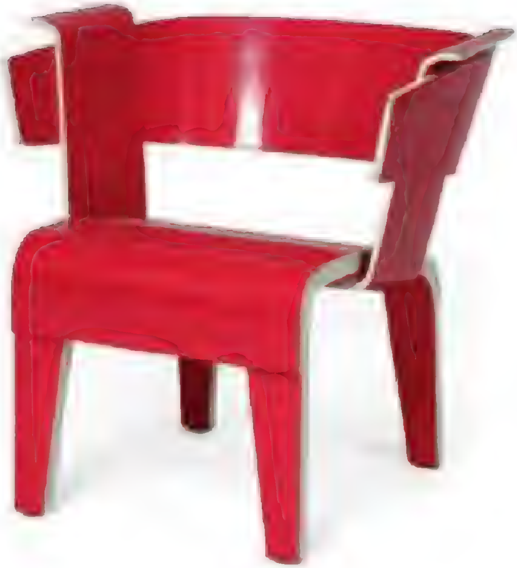
The stool was also the starting point for further developments – with the addition of a backrest, Aalto created several versions of dining room chairs. The later design of the stool, with fan-shaped legs, from 1954, was developed from this model. The perfecting of the technology of bending and processing the birchwood, a Finnish wood *par excellence*, made a major contribution to progress.

In 1933, Aalto developed a method of bending solid wood, similar to the articulation of a knee. To do so, sawn incisions were made in the length of the wood until just past the spot where the articulation should take place. Thin plates of wood were inserted into these incisions and bent while wet, as if it were laminated wood. The detail of the stool legs was further developed in 1947 by combining two legs into a Y-shape, thus enabling angles of 90 degrees. In 1954, this principle was developed even further in Aalto's most aesthetic construction, the fan-shaped X leg, in which the constituents of the leg were sawn along their length into a long, narrow wedge. A series of wedges glued together form a leg that can form an angle of 90 or 120 degrees. The fan shape of the leg, as seen from above, is a motif that one regularly sees on the ground plans of Aalto's architecture.



Alvar Aalto, chair, design 1933, object after 1935
Inv. no. 20032148
Birchwood
78 × 44 × 42 × 42 cm
O.Y. Huonekalu-ja, Turku; Artek, Helsinki model 66 (from 1935 onward)
Lit.: K. Mang, *Geschichte des modernen Möbels*, Teufen 1978, p. 135; W. Blaser, *Alvar Aalto als Designer*, Stuttgart 1981, pp. 95, 108; J. Pallasmaa (ed.), *Alvar Aalto Furniture*, Helsinki 1984, pp. 127, 144

A dining room chair with a high back of glued strips upon which birch veneer has been glued. The legs are made of laminated birch plywood. The various components have been attached to one another by means of screws. This chair is a variation of the stool (model 60) with slanting rear legs and an added backrest.



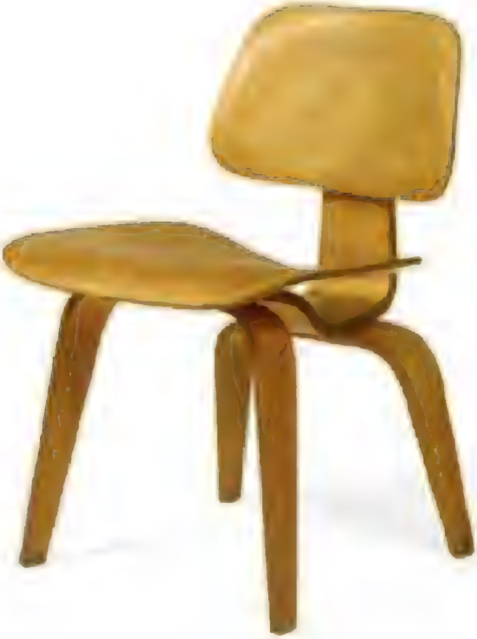
Gerrit Thomas Rietveld, easy chair (*Danish Chair*), 1946–1950
Inv. no. 20032023
Varnished plywood
36.5 × 61 × 61.5 × 59 cm
G. van de Groenekan
Lit.: J. Kær, 'Fremmede og danske stole', *Dansk kunsthandværk*, 1952, no. 4, pp. 55-60; T.M. Brown, *The Work of G. Rietveld, Architect*, Utrecht 1958, p. 110; D. Baroni: *I mobili di Gerrit Thomas Rietveld*, Milan 1977, p. 157; M. Küper & I. van Zijl, *Gerrit Th. Rietveld 1888–1964. The Complete Works*, exhib.cat. Centraal Museum Utrecht 1992, pp. 234-235; Peter Voge, *The Complete Rietveld Furniture*, Rotterdam 1993, pp, 140-141
Donation from G.T. Rietveld, 1964

Chair with a low seat, made of three curved piece of plywood screwed together. The various components have been varnished red and white. Applied techniques: bending, gluing, varnishing, screwing.
The chair has a low seat. The design was inspired by the *LCW Chair* produced by Charles and Ray Eames. This chair, designed in 1945, immediately attracted the attention of the international press due to its seat and backrest made of double-curved plywood. It is known that the *LCW Chair* had great influence on the development of laminated wooden furniture in the Netherlands. Similar furniture soon appeared on the Dutch market. In 1952, Cees Braakman, for example, produced a chair that only deviated in small details from the *LCW Chair*.

Rietveld designed the chair for the Tomado factory in Dordrecht, and the chair became known as the *Danish Chair*. There are two stories about the origin of this name. One version comes from Peter Vöge, who wrote in 1993 that the chair received its name due to the fact that the components of the chair were made in Denmark. However, a more plausible explanation came from Marijke Küper and Ida van Zijl, who claimed that the name of the chair was related to the fact that the chair was exhibited in Denmark in 1952, where it received several reviews.

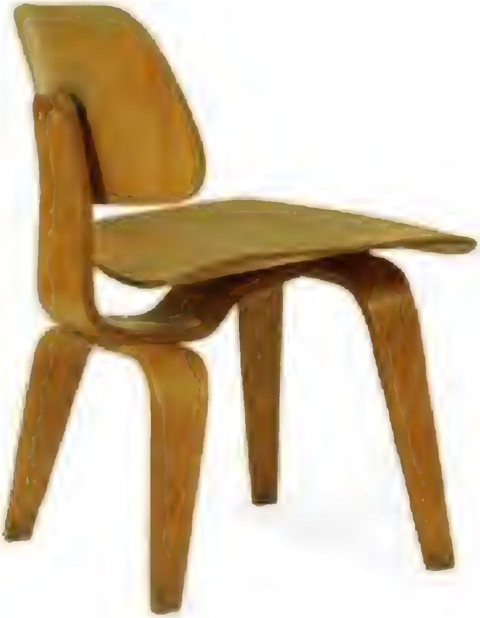
Usually the *Danish Chair* is dated as originating in 1950, but the most recent standard work on Rietveld by Küper and Zijl states that the chair originated in 1946. The source they mention is an article in *De Groene Amsterdammer* magazine, in which a Rietveld chair consisting of three laminated wooden components is mentioned. This can only be a reference to the *Danish Chair*. This immediately makes the chair more interesting, because its origin is closer to that of the *LCW Chair*. However, the chair that Rietveld designed comprised three parts with a single curve, whereas the Ray and Charles Eames chair consisted of a seat and backrest of double-curved plywood.

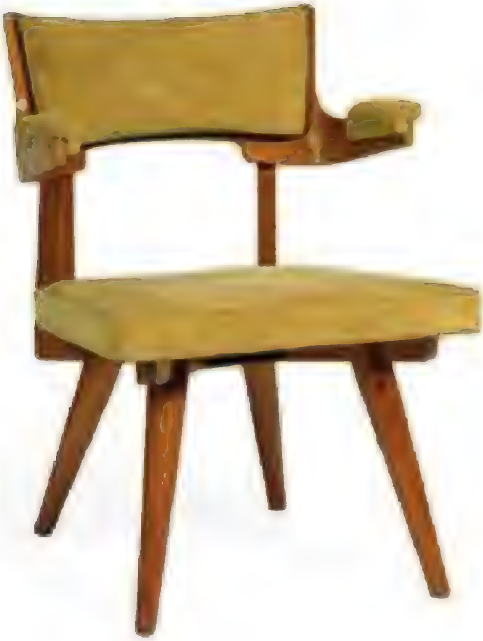
Apart from the laminated wood *Zigzag Chair*, Rietveld never produced a chair that displayed such integrated use of laminated wood as the *Danish Chair*. The fact that not everyone was enthusiastic about the design is shown by a 1952 review, with reference to the exhibition in Denmark. It is regarded as well proportioned but is further reasonably primitive and heavy.



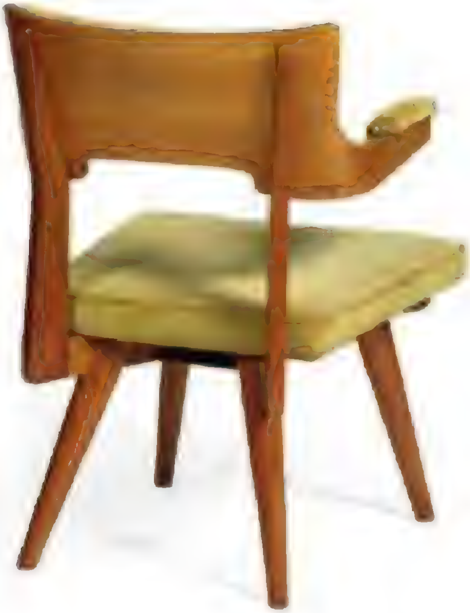
Charles & Ray Eames, chair, 1945
Inv. no. 20032045
Plywood
44.5 × 73 × 49 × 54 cm
Evans Products Company, Venice (California) (1946–1949), Herman Miller, Zeeland, (Michigan), DCW Chair (1946–1957, 1994-present)
Lit.: J. & M. Neuhart, *Eames Design. The Work of the Office of Charles and Ray Eames*, New York 1989, pp. 58-61, 68-75; A. von Vegesack, P. Dunas & M. Schwartz-Clauss (eds.), *100 Masterpieces from the Vitra Design Museum Collection*, Weil am Rhein 1996, pp. 144,145; C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 254; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 159; J.R. Berry, *Herman Miller. The Purpose of Design*, New York 2004, pp. 84-86, 88

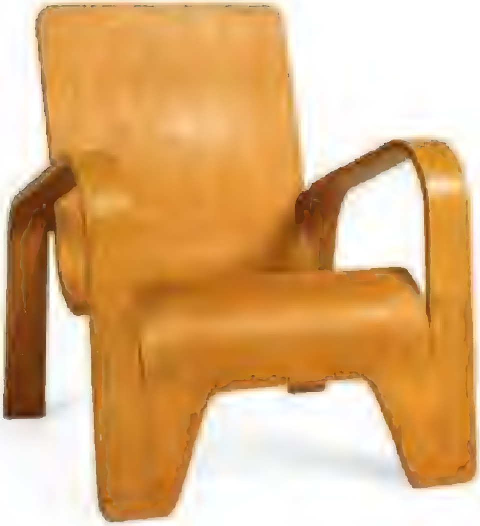
A chair without armrests. The frame is made of lacquered, bent plywood with a birch exterior layer, consisting of a high and a low support that also form the legs. These two supports are connected by means of screws to the substantially curved seat and the backrest support. The seat and the back consist of bent plywood with a clear-varnished birch exterior. A hard rubber disk has been applied at the point of connection where the seat and the back meet the supports; this disk is glued to the seat / backrest.





Wim van Gelderen (?), chair with armrests, 1950s
Inv. no. 20032132
Cherry, plywood; foam rubber, corduroy
42 × 75 × 53 × 56 cm
Unknown, probably 't Spectrum, Bergeyk
Lit.: P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985*, Amsterdam 1986,
pp. 42, 66, 82

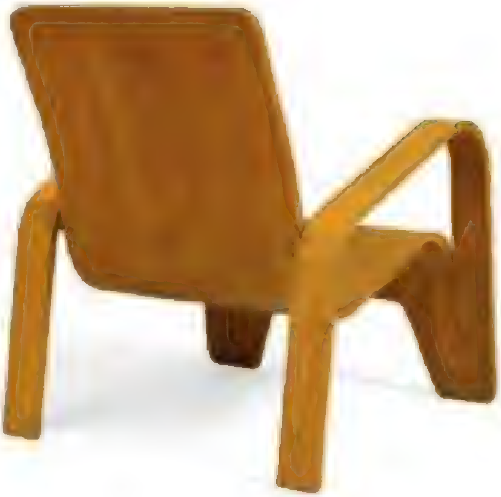




Han Pieck, easy chair, 1946–1948
Inv. no. 20032121
Plywood, brass
35 × 78 × 66.5 × 74 cm
LAWO (Laminated Wood), Ommen
Lit.: P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985*, Amsterdam 1986, pp. 29, 70; P. Vöge, 'Een stoel uit één stuk', in: H. Piena (ed.), *Meubels uit de vorige eeuw, restauraties uit deze eeuw*, symposium report of the Sixth Nederlandse Symposium on Wood and Furniture Restoration, Stichting Ebenist, Amsterdam 2003, pp. 36-40

A low easy chair with armrests. The exceptional feature of this chair is the fact that it consists of a single bent sheet of 20-mm-thick birch plywood. By making incisions in the sheet, the armrests and the legs can be bent from the same wooden plane. Two brass angle joints have been embedded at the rear legs and at the transition from the seat to the backrest.

The chair was designed by Han Pieck, who drew up the first designs during WWII. At that time, it was absolutely impossible to realize the design. After the war, Pieck came into contact with Maarten van Raalte, who had worked for aircraft manufacturer Fokker and knew quite a bit about high-frequency lamination technology. Van Raalte and Pieck bought the transformer that was needed for the lamination process from Philips. They then jointly established the LAWO company and made the presses and moulds that were necessary for the production of the chair. In the meantime, they managed to obtain a contract with a sales firm in Amsterdam for the production of 10,000 chairs.

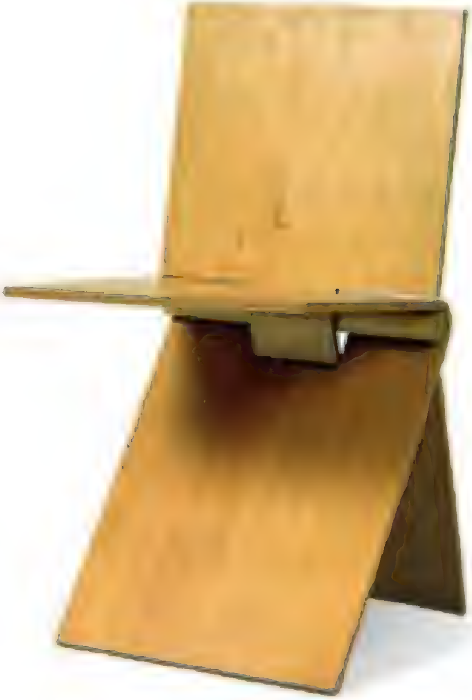


From that moment onward, it should have been a success story, but production-technical problems spoiled the happy ending. As Pieck himself said: 'After six months preparation of press models and other jigs, we began pressing the first examples in our moulds. This was where

An embedded brass angular bracket links the armrest to the backrest.

the problems started, because when the armrests were catalyzed and we opened the press, the seat exploded because it had reached a much higher temperature of 120 degrees, thus forming steam. One the other hand, if we oriented the time and capacity of the generator in accordance with the requirements of the seat, the armrests and rear legs remained unglued.' Hundreds of chairs were lost during the trial pressing, until Pieck had the idea of constructing the bottom aluminium sheet of the press, which served as an electrode, from two different sections so that the seat could be given a different current by means of a condenser. As a consequence, it was possible to combine two different temperatures in the mould so that the drying process could take place evenly.

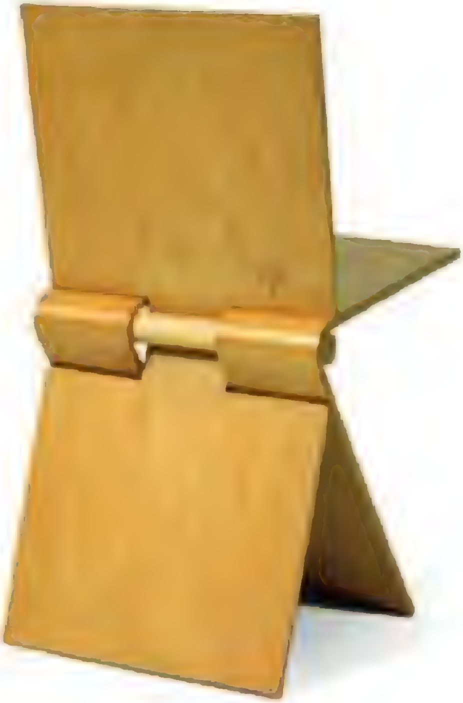
Unfortunately, Pieck's invention came too late: the contract to supply 10,000 chairs had expired and attempts to find dealers for the chairs elsewhere were largely unsuccessful. Ultimately, fewer than 1000 models were sold and the factory had to close down in 1948. Because the designers had been so busy getting the company off the ground and organizing production in the period 1946-1948, they had not had time to promote the product in the specialist journals. The relative anonymity of Pieck's design is shown by the following anecdote: in 1950, the chair was displayed at the *Schoonheid in Huis en Hof* (Beauty in the Home and Courtyard) exhibition in Amersfoort. Gerrit Rietveld, who had been responsible for the exhibition layout, had given the chair a place even although he did not know who the designer was. In a review of the exhibition in the magazine *De Vrouw en haar Huis* (Woman and her Home) the design was attributed to Rietveld himself!

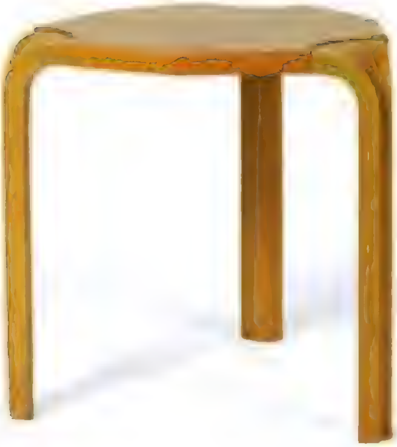


Bruno Ninaber van Eyben, chair, design 1977, object after 1979
Inv. no. 20032038
Laminated beech
49.5 × 81.5 × 40 × 53 cm
Artifort, Maastricht (from 1979 onward)
Lit.: P. Vöge & B. Westerveld, *Stoelen. Nederlandse ontwerpen 1945–1985,* Amsterdam 1986, p. 58, 141

Chair with a high seat. The chair is made of two sheets of clear-varnished beech plywood. The two sheets are mutually connected at the articulations by means of slits through which a beechwood rod with a diameter of 4 cm has been thrust.

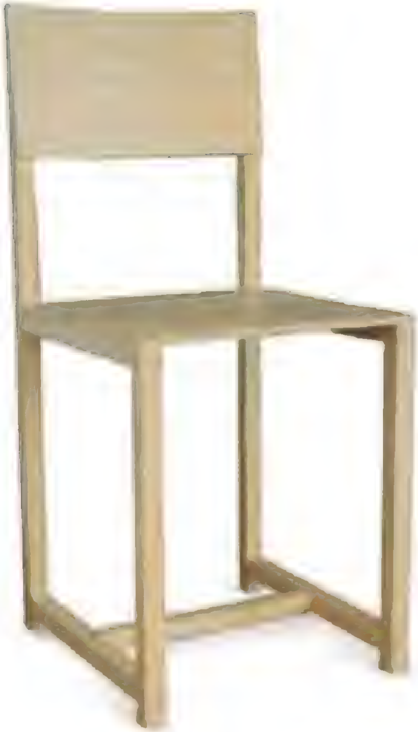
The chair was designed by Bruno Ninaber van Eyben in 1977, for an exhibition in the Stedelijk Museum in Amsterdam. In comparison to the rest of his oeuvre, the wooden object occupies an exceptional position. The chair was an elaboration of a constructive concept, while Ninaber usually employed an assignment to make a poetic analysis of the criteria that are required by the user and the production process. The chair can be seen as an analysis of the interplay of forces that occurs between two planes of laminated wood. These are connected by a wooden rod around which they are curved. The chair is conceptual in its structure and one of the few objects that Ninaber made that were not intended for mass production. Remarkably, the chair was the first and almost the only design that was put into production in a common way. However, it unconventional form was a factor that limited its commercial success. Furthermore, it also encountered constructive problems: the planes of laminated wood began to warp a little after some time, so that the seat and the back were no longer completely aligned.





Alvar Aalto, stool, 1954
Inv. no. 20032118
Birchwood
45 × 45 × 46 × 45 cm
Artek, Helsinki, model X 602
Lit.: K. Mang, *Geschichte des modernen Möbels*, Teufen 1978, p. 136; W. Blaser, *Alvar Aalto als Designer*, Stuttgart 1981, pp. 126-127; J. Pallasmaa (ed.), *Alvar Aalto Furniture*, Helsinki 1984, pp. 129, 161; T. Kellein (ed.), *Alvar & Aino Aalto Design*, Ostfilden-Ruit 2004, pp. 152-153

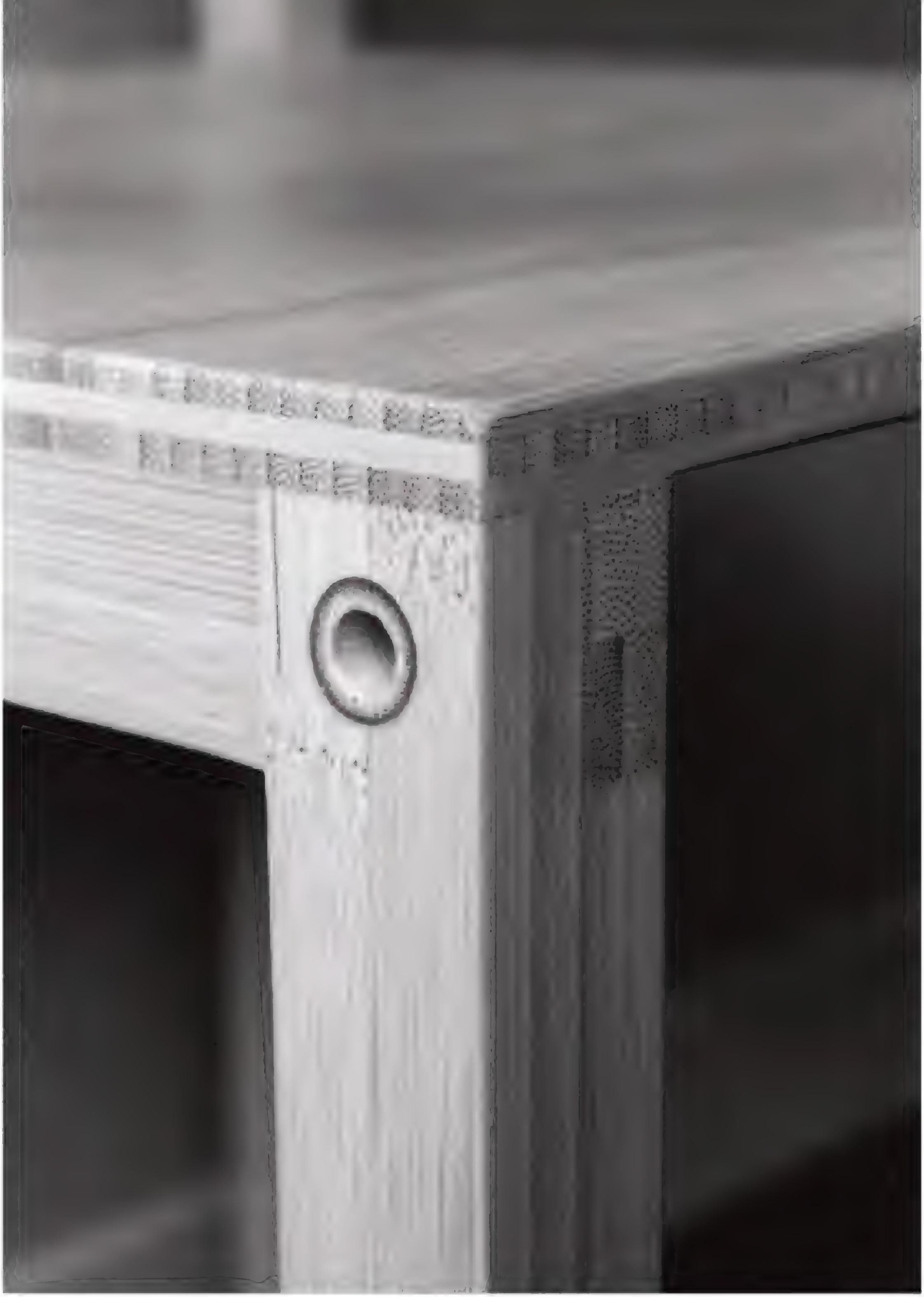
Hexagonal stool with 'fan legs', clear varnished. The legs are made of bent ash that has been sawn into tapering strips and glued to form a palm rosette. The seat, which is flat and varnished, is coated with ash veneer, while the legs are slotted into the seat without the use of screws.



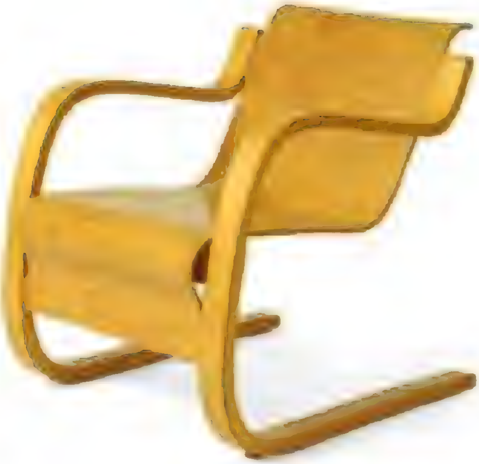
Marco Groenen, chair (grass chair), design 2003, object 2008
Inv.no. 20080001
Laminated bamboo ('Moso'), lightly pigmented impregnating oil, finished with wax
46 × 85 × 37 × 40 cm
Marco Groenen
Acquired with the support of the designer in 2008, following the bamboo exhibition at the Faculty of Architecture

This chair consists of a supporting frame of straight posts and bars, made of clear laminated bamboo. The components are connected by means of glued half-timber joints, reinforced with dowels. A segment of the bamboo shoot has been used as the dowel. The seat and backrest consist of bamboo plywood and are glued to the frame. The backrest of the chair is bent in one direction and the seat has a light curve in two directions. To make laminated bamboo, the hollow bamboo stem is cut into strips along its length. The outermost green bark is removed and the material is treated to resist fungus. It is then dried and planed crosswise. The strips are subsequently sorted and glued in all kinds of configurations to form plates, planks, and mats. Laminated bamboo has exceptional constructive properties. Due to the fact that the long bamboo fibres lie longitudinally in the shaft, the stems are extremely rigid even with small diameters.

Offering regular quality, the material is readily applicable for industrial use. Any imperfections in the strips can be removed from the production process at an early stage. In principle, bamboo can undergo all normal wood-processing treatment, but the typical fibre structure ought to be taken into account. Bamboo has almost exclusively longitudinal fibres and thus little 'binding' structure in the breadth. As a result, single-layer plates are vulnerable to splitting at the ends. To make the seat and backrest of this chair, three plates, each consisting of a single layer of glued bamboo strips, were pressed crosswise on top of one another in a mould.



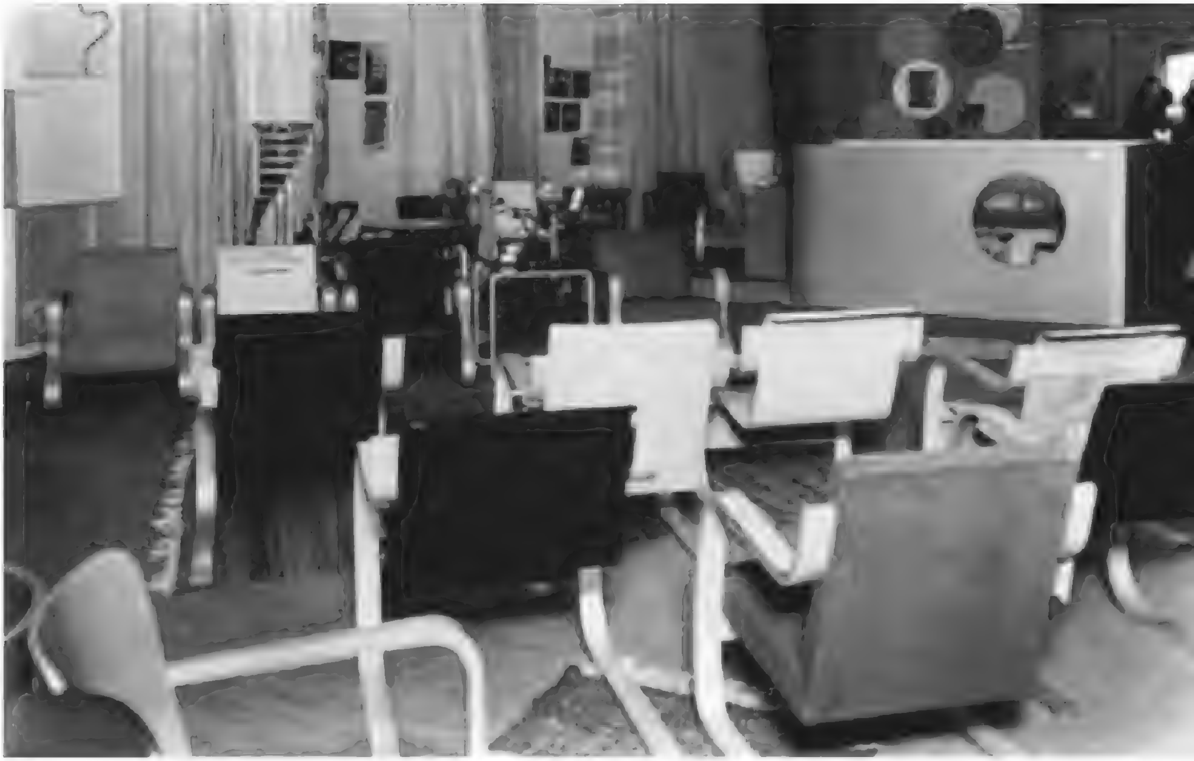
The connection between the leg and the seat bar, with hollow bamboo dowel. Source: Marco Groenen.



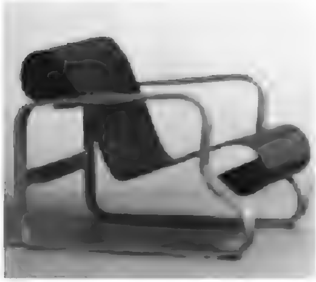
Alvar Aalto, fauteuil, design 1931–1932,
object after 1935
Inv. no. 20032056
Laminated birchwood and birch plywood
39 × 71 × 61 × 74 cm
O.Y. Huonekalu-ja, Turku; Artek, Helsinki,
model 31 (from 1935)
Lit.: W. Blaser, *Alvar Aalto als Designer*, Stuttgart 1981, pp. 93, 95; J. Pallasmaa (ed.), *Alvar Aalto Furniture*, Helsinki 1984, pp. 126, 138-139; C. & P. Fiell, *1000 Chairs*, Cologne 2002, p. 219; T. Kellein (ed.), *Alvar & Aino Aalto Design*, Ostfilden-Ruit 2004, pp. 46-47

Simple easy chair, composed of three elements: two armrests, which also form the legs, and a bent plywood sheet for the seat and the backrest. The armrests/legs are linked by means of two cross-rods that also support the plywood seat and backrest. Down to the front transverse bar, the curved leg is three millimetres thicker than the ongoing armrest. All layers of birchwood have been glued lengthwise along the wood. The easy chair was also available with black or white-lacquered seat/backrest.

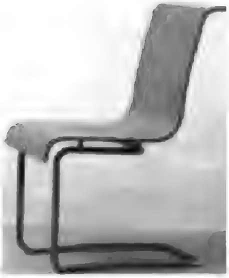
Since its introduction at the Weissenhofsiedlung in Stuttgart in 1927, the cantilever chair, the so-called 'Freischwinger' or freely-suspended chair, has grown to become the symbol of modern design. Aalto first designed a cantilever chair for the sanatorium in Paimio (1929-1930). It was a 'hybrid' chair, with a subframe of tubular steel and a plywood seat and backrest. However, he regarded steel as being excessively cool, and developed an alternative from laminated birchwood for the sanatorium. Due to his knowledge of wood technology and his close connections with the wood-processing industry, Aalto was able to combine the new lamination technique with modern design. After an exhibition of his work in London in 1933, his work received more publicity and was emulated by Marcel Breuer, among others, who began to become bored with tubular steel design.



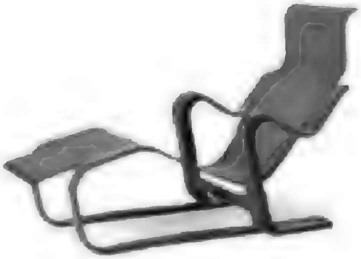
Exhibition of Aalto's chairs at Fortnum & Mason, London, 1933.
Source: D.E. Ostergard (ed.), *Bent Wood and Metal Furniture: 1850-1946*, American Federation of Arts, New York 1987, p. 158.



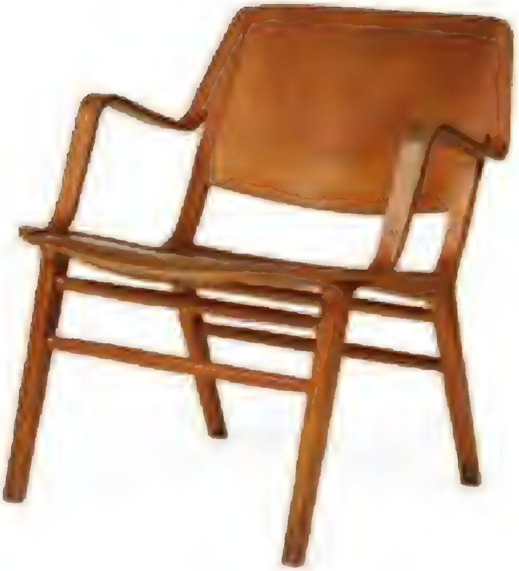
This chair was also designed by Aalto for the Paimio sanatorium, 1932. Source: T. Kellein, *Alvar & Aino Aalto. Design.* Hatje Cantz, Ostfildern-Ruit 2005, p 39.



Aalto's first cantilever chair, 1929-1930. Source: O.M. archives.



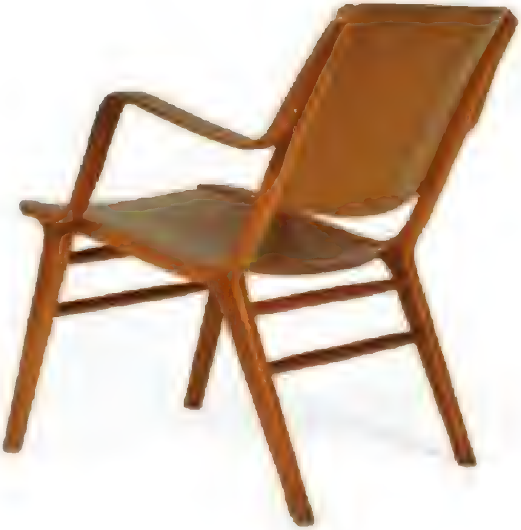
M. Breuer, easy chair, 1936. Source: C. Wilk, *Marcel Breuer; furniture and interiors*, Architectural Press, London 1981, p. 129

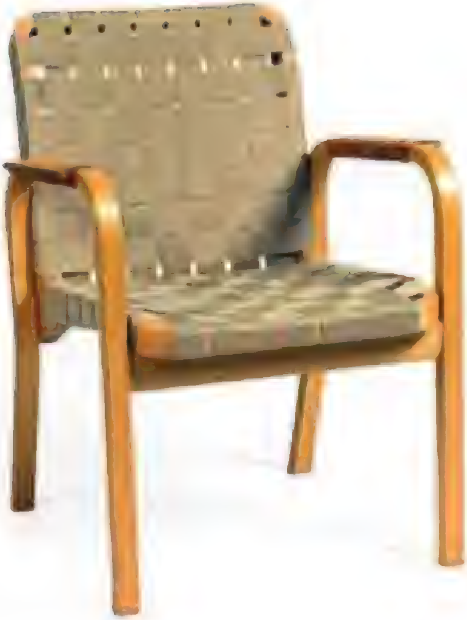


Peter Hvidt & Orla Mølgaard-Nielsen, easy chair (*AX Chair*), 1950
Inv. no. 20032167
Laminated teak and beech, birch crossbars; plywood with beech exterior
40.5 × 75.5 × 61.5 × 70.5 cm
Fritz Hansen, Allerød, model number 6020
Lit.: C. & P. Fiell, *1000 Chairs*, Cologne 2000, p. 303; L. Dosi Delfini, *The Furniture Collection Stedelijk Museum Amsterdam*, Amsterdam/Rotterdam 2004, p. 182

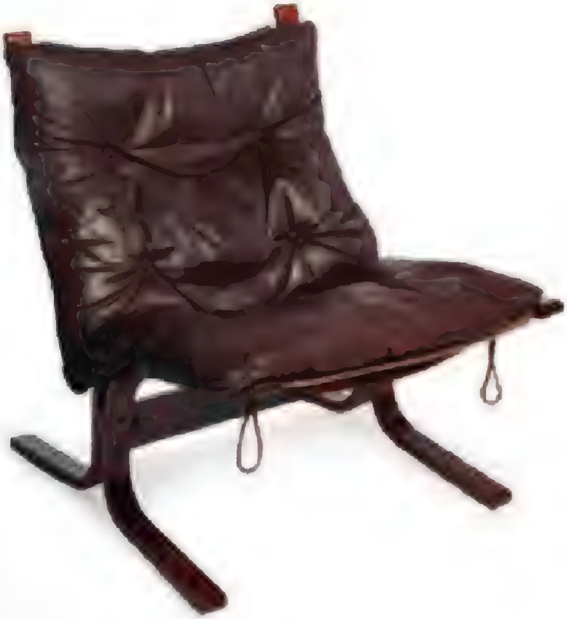
An easy chair with armrests. The frame consists of two side sections of formed laminated beech, connected by four round beechwood rungs slotted into the legs. These laminated legs have a teak core. The seat and backrest are made of plywood with a beech exterior layer and are slotted into a groove in the side frames.

The chair that Hvidt and Mølgaard-Nielsen designed was a combination of the most recent developments in the field of lamination. The seat and the backrest were double-curved and the embedding of a mahogany core inside the birchwood legs was also an innovative element. The technique by which the side frames were made was already used in the manufacture of tennis rackets, a feature than can be recognized – with a little imagination – in the details of the transition from the rear leg to the seat and backrest. The chair could be easily assembled and dismantled: the two side frames were equipped with grooves into which the back and the seat slotted. The four rungs between the legs ensured the stability of the construction. The seat and backrest were not really necessary for stability: the chair was also available with a reversible, supple leather seat that was attached to the side frames in the same way.





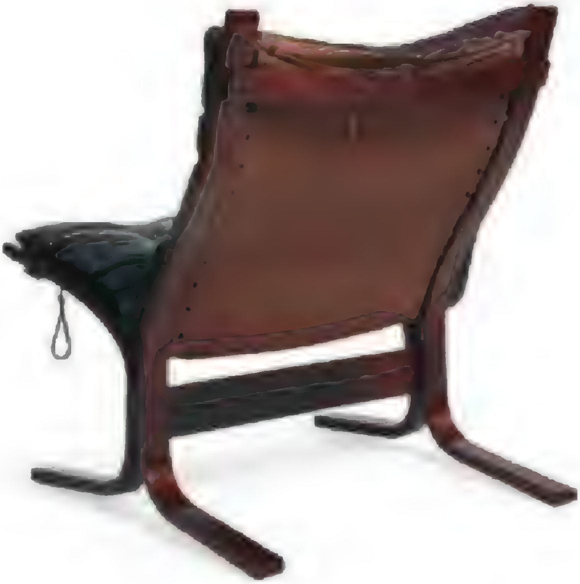
Alvar Aalto, chair with armrests, 1947
Inv. no. 20032129
Birch plywood; woven textile bands
41 × 81.5 × 61 × 64 cm
O.Y. Huonekalu-ja, Turku for Artek, model number 45
Lit.: J. Pallasmaa (ed.), *Alvar Aalto Furniture*, Helsinki 1984, p. 128; T. Kellein (ed.), *Alvar & Aino Aalto, Design*, Ostfilden-Ruit 2005, pp. 144-147



Ingmar Relling, easy chair (Siesta Comforta), approx. 1965-1970
Inv. no. 20070006
Beach plywood, dark varnished; canvas, laces, stuffing, leather
42.5 × 80 × 64.5 × 78.5 cm
Westnote Furniture/Vestlandske Møbelfabrikk, Norway, currently produced by Rybo West Nofa
Lit: F. Wildhagen, *Norge i Form*, J.M. Stenersens Forlag, Oslo 1988, p.168
Donation from Ms. J.C. Thieme, 2006

The frame of the easy chair consists of dark-varnished bent beech plywood, the parts are bolted together. Canvas has been stretched between these, attached by means of laces that are threaded through holes in the frame. The cushion, extending in one piece from the seat to the backrest, is upholstered in dark-brown leather.

The plywood construction is identical to that of Relling's more famous design, the Siesta, dating from 1965, which has a higher backrest. The front and rear parts of the frame, bolted together in an X-Y-shape, was an innovative idea that was much copied. The Siesta was produced by the Vestlandske Møbelfabrikk. The frame of this chair displays a factory label: 'Westnote furniture, Norway', probably the export name.



Natural materials

The decision to place 'wood' and 'natural materials' in separate categories cannot be fully explained on the basis of the materials used. The 'natural materials' category consists mainly of wickerwork furniture. The term 'wickerwork' is used as a collective name for materials that have come from various types of plant, and not only from willow trees. It also refers to furniture made of rush, cane and twigs, and is also used for rattan or even bamboo.[1] In material technical terms, the separation of 'wood' and 'natural materials' is completely arbitrary, as willow shoots and rattan also consist of wood.

The 'wickerwork' category refers generally to the way the material is used: most items of cane and reed furniture are wickerwork, i.e., they are woven, so in everyday language this type of furniture is referred to under a single name. In this catalogue, chairs with a supporting frame made of the above-mentioned materials but not made of wickerwork have also been placed in this 'natural materials' category.* In that case, inclusion in this category is exclusively a consequence of the plant sort used for the supporting construction. Wickerwork is one of the oldest techniques used by humans. Objects can be created almost directly, with very few tools, from materials that occur in nature. In Mesopotamia for example, reed or rush harvested from the banks of the Euphrates or Tigris was used to make user goods. In Egypt, a shortage of wood stimulated people to make table legs and even table tops from bundles of reed, bulrush and papyrus. In Europe, thin willow twigs (*Salix alba, Salix caprea*) were used to make furniture in during the Roman era. Wickerwork techniques similar to those used to make baskets* were applied, so that no additional wooden supporting frame was needed. This practice has remained in operation down through the centuries, ensuring that the design of such furniture has changed very little over the years. Due to the flexibility of the material, cane and wickerwork chairs were regarded as being rather comfortable in comparison to their wooden counterparts. Wickerwork furniture produced for specific purposes (cots, for instance) was part of the standard assortment of households in all layers of the population until deep into the 19th century.[2]

Certain weaving techniques can also be applied to give a wooden chair a woven or matted seat. Such seats have been included in the 'wood' category in this catalogue, but are mentioned here due to a correspondence in materials used. A chair seat can be made of bulrush, willow twig, strips of peeled

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[1] Although the term '*Spanish reed*' is applied erroneously as a synonym for rattan, it is a south-European type of reed (*Arundo donax*) that is used for fishing rods and walking sticks. The material that is used for chair seat mats, generally in simple wooden chairs, resembles reed at first sight, but that is a different type: bulrush (*Scirpus lacustus* or*Scirpus tabernaemontani*).

[2] Willow shoots can be peeled during a short period after being cut; then they remain yellow. During the rest of the year, the bark has to be boiled off and that produces the reddish wickerwork. The hardy twigs of other bushes, such as the buckthorn (Rhamnus frangula) for example, can also be used for wickerwork.

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wood, bark or rattan,* or of rope, strips of leather, and cotton band. In general, the preference was to use locally available natural materials, and in the Netherlands that was bulrush or reed. Rope, leather strips and suchlike were used if the local flora did not produce suitable weaving materials.

Rattan is an exception to this principle. Rattan grows in large areas of southern China, India, Malaysia, the Philippines, and Indonesia. In these areas, rattan has been used for centuries to make all kinds of user goods, but not normally for furniture. When the first Europeans settled in Asia in the 17th century, they found woven rattan seats to be a cool alternative to upholstered chairs. Split cane, narrow strips of rattan bark, was appreciated for its regular appearance and its suitability for fine wickerwork. The difference with European willow shoots and twigs is that these become thinner along the length of the stem and also have an irregular appearance. Rattan does not have such shortcomings, and the shoots of some types can even grow to more than 200 metres in length, with a more or less consistent thickness.[3] When the material became known in Europe from around 1660 onward, chairs, beds, stools and tables with rattan wickerwork became popular in London and Amsterdam. The items were cheaper than upholstered furniture, and were also light and easily cleaned. The raw material was imported into Europe and processed here and, by the end of the 1670s, London accommodated a lively split cane furniture industry. The 'cane chair' spread from Great Britain to other European countries and the United States.

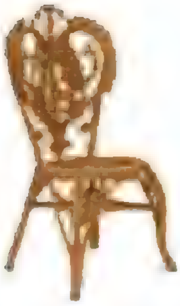
Split cane seats have remained popular up to this very day, although they are now manufactured with mechanically woven mats. In the 1950s, Danish design produced many new interpretations of the *Cane Chair*; a chair with a woven seat on a wooden (or occasionally steel) frame. A characteristic feature of this type of chair is the smooth and austere seat that is visually detached from the supporting frame.

For a long time, split cane remained the only known rattan product in the Western world. In the 1830s, however, Cyrus Wakefield, a resident of the port of Boston chanced upon rattan stalks that had been used as packaging material. He realized that the robust, flexible stalks would be exceptionally suitable for making a supporting frame for furniture. Initially he began to import rattan and sell it to chair weavers and furniture makers, but in 1844 he set up his own furniture manufacturing business. The company flourished, moved to another location, and expanded. But China suffered from civil conflict in the period 1851-1864, so that the import of rattan began to dry up.

[3] Of the many types of rattan palms, the commericially interesting varieties all belong to the genus Calamus or Daemonorops. When rattan is harvested, the leaf, thorns and bark are stripped from the stem. After selection according to thickness, length and quality, the bark is stripped from the core. Its thickness can vary from 3mm to around 10cm. The bark is crushed and cut along the length. The shiny yellow strips thus produced are called split, weaving or winding cane. These strip variants of rattan are used for weaving or or to wind around the constructive sections.
In non-split form, rattan is called stick rattan, while the thinner variants are called binding rattan.

A shortage of material forced Wakefield to scale down, and to deal creatively with the material available. A factory worker discovered how fibre could be extracted from rattan splinters so that it soon became possible to weave all kinds of mats. They also discovered that the core of the rattan stalk, which had been discarded up to that point, could be used. The core, the pulp, gave pulp cane, which is extremely suitable for fine regular weaving and is also easily coloured. In the 1870s, American manufacturers of wickerwork furniture, who were required to import German willow shoots due to the lack of local production, turned *en masse* to the application of pulp cane. Europe followed this development a little later. In 1900, pulp cane was introduced into Vienna, where it soon became popular for luxury furniture.

In the course of the 19th century, the production of wickerwork furniture in Europe and the United States gradually became industrialized. The products had evolved from traditional models to fashionable items that, starting from conservatory, garden and terrace, had conquered every corner of the interior. In the second half of the 19th century, the variation in models was extremely wide, ranging from simple curved forms to models in which the flexibility of the rattan was used to realize an abundance of scrolls and styles of weaving.* Such models, colourfully painted and covered with textile, were typified as *fancy* in the United States. Especially in the last two decades of the nineteenth century, the decoration became quite excessive and the models even rather absurd. At the turn of the century, a reaction to this development began to appear.



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In Vienna, a major producer of wickerwork furniture, Prag-Rudniker, decided to have new models developed by professionally trained architects and artists. Prior to that time, cane furniture, in contrast to wood and some metal items, had tended to remain a rather anonymous (industrialized) product. The 'Wiener Moderne' designers (such as Hans Vollmer, Wilhelm Schmidt, Otto Prutscher, Kolo Moser, Josef Zotti, for example) pursued functionality and a history-free design that was inherent to the material and the weaving techniques used. They made much use of cane pulp, which was being imported into Central Europe for the first time. The results were striking: the cubist forms of Art Deco and the expressive lines of Jugendstil could be readily articulated in wickerwork. Following Vienna's example, the design of cane furniture by renowned designers (Henry van de Velde, Peter Behrens, Richard Riemerschmid, Bruno Paul) in Germany and (Benjamin Fletcher for Dryad) in

England became common commercial policy.

Whereas the emphasis in Germany and Austria lay on the work created by an individual designer, the focus in the British Arts & Crafts movement lay on the manual work of the craftsman. The first renewed cane pulp models clearly display the influence of Viennese design, but later they tend to rely more on traditional English and Antique examples. The resulting models had simple flowing forms that accommodated any decoration in the weaving pattern. This design revival came to an abrupt end with the outbreak of the First World War, although some models were used as mass products in restaurants or on luxury ocean liners after the war.

In the United States, too, more sober models began to appear after 1900, derived from traditional chairs and local willow shoots instead of rattan. Similar to the English Arts & Crafts models, the 'Craftsman Willow Furniture' placed the emphasis on traditional craftsmanship. The models were woven from thin twigs according to traditional basket-makers' patterns, or from thicker twigs with a more open pattern. A new type of *Cane Chair* was also created: chairs made of curved hickory, whose back and seat were made of thinner curved twigs.

In Vienna, Josef Frank (1885-1967) became a leading designer of rattan furniture after the First World War. His designs were characterized by great transparency, which he achieved by filling the seat and backrest with more sturdy rattan sticks, occasionally elegantly curved, instead of merely a thick weave of rattan. The patterns call to mind those of the open *Craftsman Willow* chairs that had appeared in the United States around 1900. This technique was subsequently adopted by various designers throughout Europe, right down to the 1940s and 50s,* as is evident in the work of the Danish designer Viggo Boesen, and the Dutch designer Dirk van Sliedrecht who worked for the Jonkers company. In 1949, Gerrit Rietveld designed this type of chair for Metz & Co. Around 1950, the Italian Franco Albini used the same technique to construct sculptural chairs from thicker rattan stalks arranged in parallel.

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After Josef Frank, the next impulse in the context of cane furniture design came from the Bauhaus, where Erich Dieckmann and Marcel Breuer followed the furniture-makers course between 1921 and 1925. From the end of the 1920s onward, Dieckmann (1896-1944) was engaged in designing cane furniture for the balcony and garden. Dieckmann pursued the aim of producing minimalist and clear designs. Besides rattan, he also worked with steel and curved wood, and attempted to apply construction methods specifically oriented to the various materials. In his cane furniture, this led to his making use of the flexibility of the material to generate a stable supporting construction from as few components as possible. The woven seat and back were attached by means of as few windings as possible, so that the frame remained visible.

In the Netherlands, Ida Falkenberg-Liefrinck (1901-2006), a designer from the circles around the *De 8 en Opbouw*, fulfilled a similar role in the design of rattan furniture. In 1933, she moved into an apartment above a rattan shop and found the articles sold there so ugly that she decided to design something better herself. Falkenberg-Liefrinck regarded rattan as a more affordable alternative for interior furniture than the modernist tubular steel furniture. She also wished to make optimum use of the constructive potential of the material, and to produce a frame made of a single piece wherever feasible. The frame had to be wound with cane pulp as little as possible, and brass screws instead of nails made the furniture more durable. In 1938, Metz & Co commissioned her to create a bed-sit room for a working woman. She subsequently designed a bed, divan, lamps and a tea trolley,*** in addition to tables and chairs

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The 1950s and 60s in Europe witnessed the appearance of wickerwork chairs reinforced with metal wire. The designers were probably inspired by the work of Eames and Bertoia at Knoll, where metal gauze was used to strengthen synthetic seats. As a result of its great flexibility in comparison to tubular steel, cane or curved wood, metal wire gave greater freedom of form creation. Egon Eiermann (1904-1970) was a designer who combined metal wire and wickerwork.

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However, Eiermann went further and, in around 1950, he developed a new form in which it was possible to apply cane pulp without an auxiliary supporting frame. The elimination of the solid load-bearing parts influenced the design: the cane pulp was assigned a double-folded shape. Eiermann's designs look organic and earthy, and they call to mind the seats produced by Eames. In the 1950s, a similar exploration of the freedom of form offered by rattan was evident in the work of several designers, including the Danish couple Nanna and Jorgen Ditzel. Their most renowned design is the *Suspended Egg*, dating from 1957. After the fifties, interest of European designers in cane furniture quickly diminished. In the 1970s, however, cane furniture made an unexpected comeback, although this involved primarily the traditional models. The 'rural' and 'natural' connotations of

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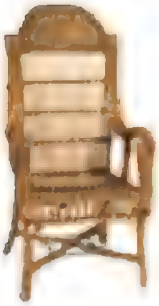

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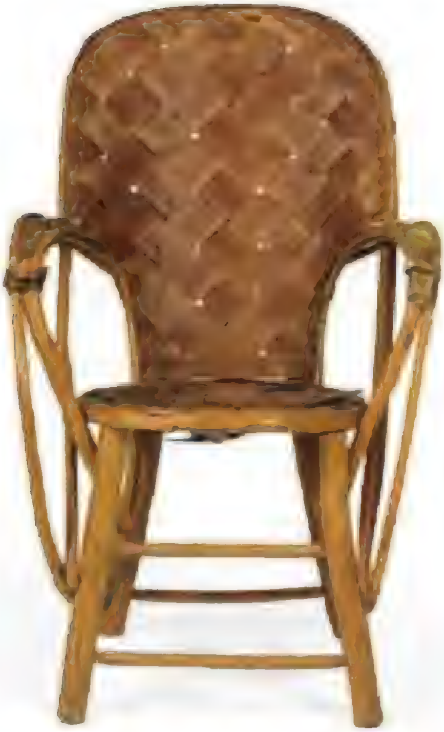
this furniture were the main reason for the popularity of the material.*

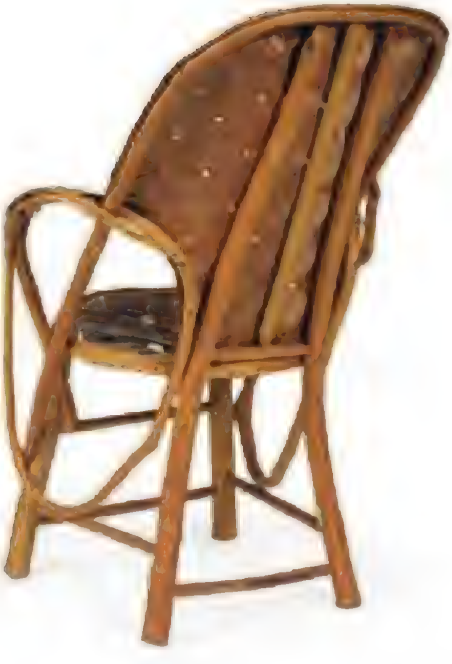
In the USA, the production of items with form quotations from traditional Oriental furniture began in the 1960s, and these became popular in the 1970s. Occasionally, the production of furniture also took place in Asia, where the weaving could be done more finely. In the early seventies, Nanna Ditzel designed furniture for *Fennkong*, an Asian manufacturer. The British design group *Pentagram* designed a wickerwork easy chair in 1974 and this design was implemented by the Malaysian Trade Commission. It had exactly the same form as a heavy, upholstered club chair. Recently, this style, with items of furniture that look solid and heavy, has again become very popular.

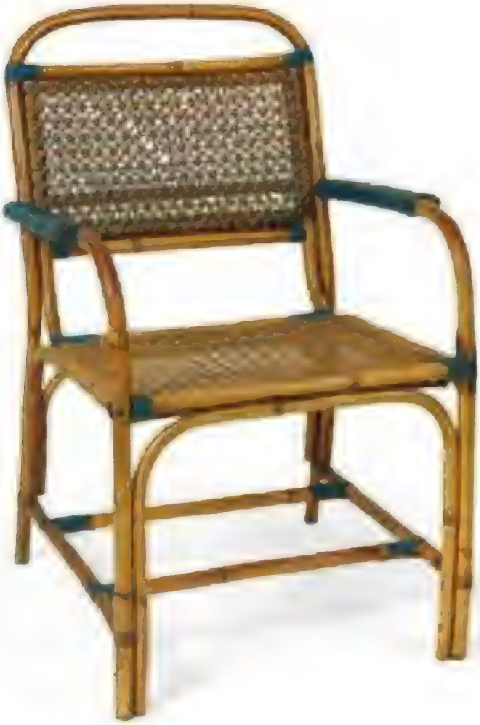
Cane furniture continues to figure among the new designs, where the combination of a natural material and extremely great freedom of form determines the choice of material.



Unknown, chair with armrests, type late 19th century – present, object approx. 1970
Inv. no. 20032163
Chestnut wood; chestnut splint
44.5 × 94 × 59 × 62 cm
France
Lit: H. de Jong (ed.): *Stoelen*, Delft 1974,
p. hout 06-05

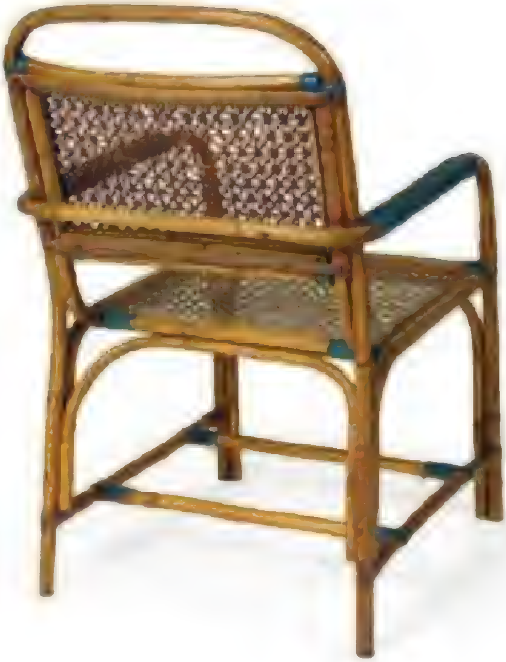
A chair with a high seat and armrests. The frame is made of curved chestnut shoots held together by nails. The seat and backrest consist of woven chestnut splints.
This chair probably came from the Auvergne in France. It is made of thin twigs and strips of chestnut that were left over after the production of wine casks. It is a typical regional product, the model is more than a hundred years old.

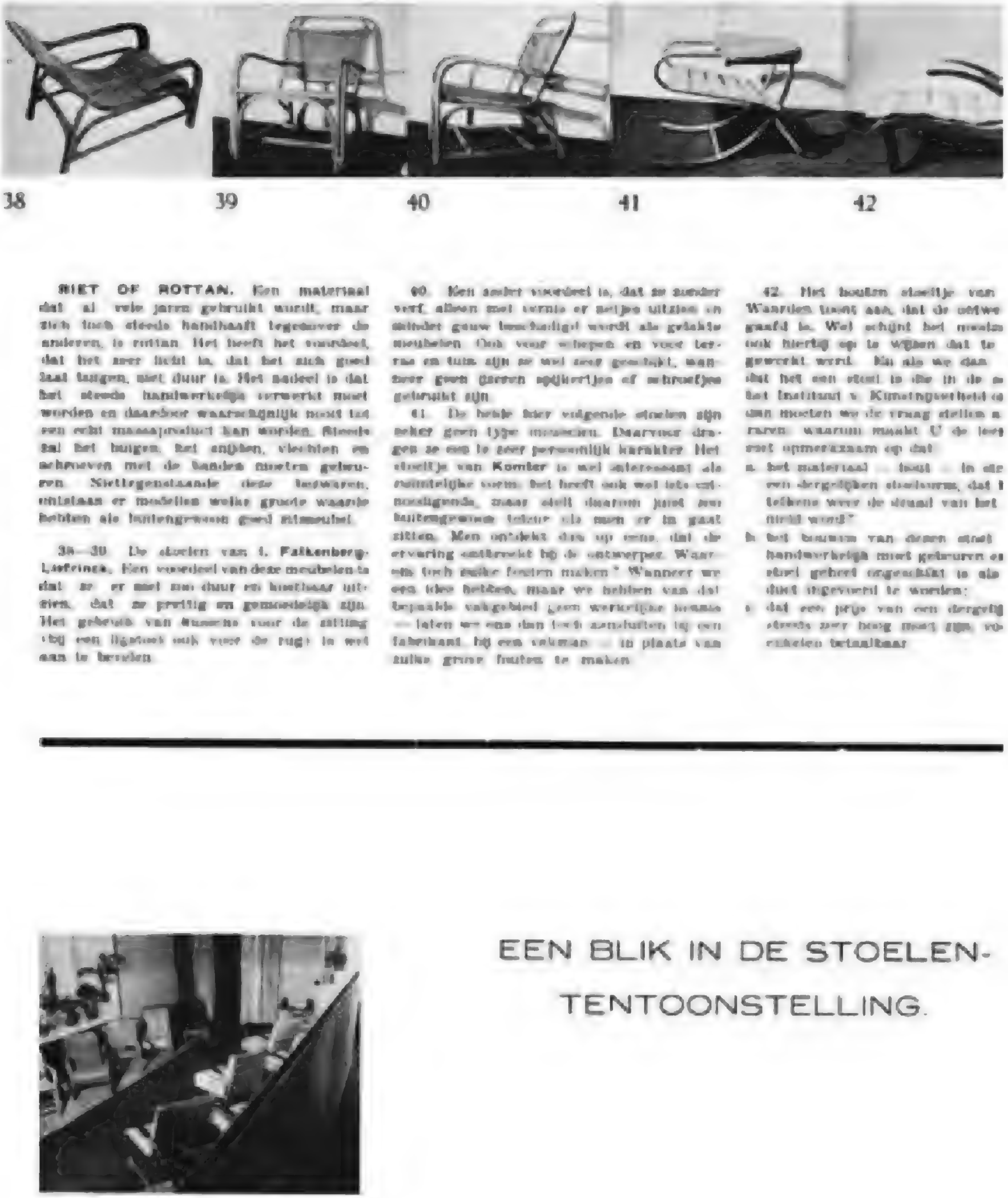




Ida Falkenberg-Liefrinck, chair with armrests, 1935
Inv. no. 20032161
Cane; split cane
43.5 × 91.5 × 57 × 65.5 cm
W. Klomp, Apeldoorn
Lit: Anonymous: De stoel gedurende de laatste 40 jaar, *De 8 en Opbouw*, 1935, no. 1, p.8
Donation from Ida Last

Table chair with armrests. The frame is made of cane, the joints are bound with split cane that has been painted dark blue. The seat and back consist of split cane, uncoloured or blue, woven together. The picture of a cane chair by Falkenberg-Liefrinck, similar to this one in terms of material use and construction, accompanied an article in De 8 en Opbouw entitled 'De stoel gedurende de laatste 40 jaar' (The Chair During the Last 40 Years). This model deviates from Falkenberg-Liefrinck's later cane designs with their fluent lines. It more closely resembles a cane chair she designed in 1936, produced by Lang & Zn. in Ulft, and a chair with an open-work backrest that she designed for Metz & Co in 1939. Other deviating features of the chair are the use of blue-dyed cane casings and the weave pattern in the seat and backrest. The use of brass screws instead of nails and the fact that only the constructive joints were bound with split cane are typical features of Falkenberg-Liefrinck's designs. Until then, it was customary to conceal the whole skeleton from view by comprehensive winding.

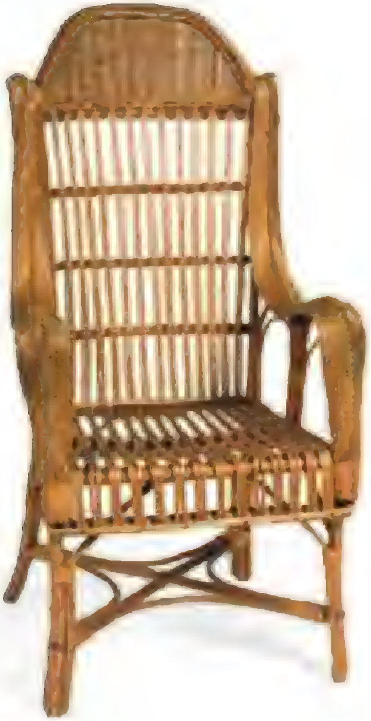




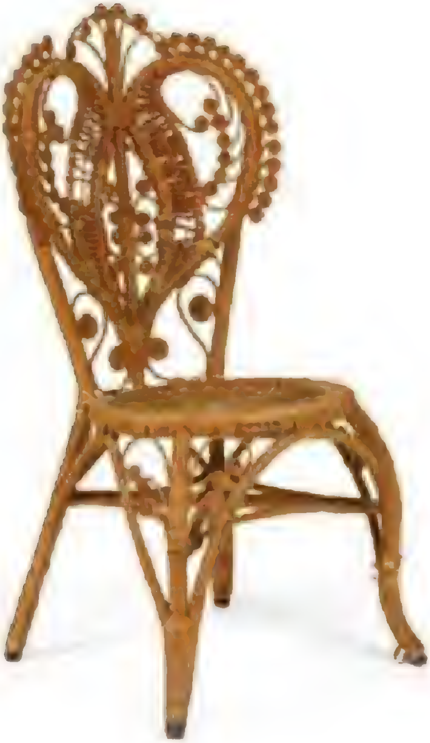
38 39 40 41 42

EEN BLIK IN DE STOELEN-TENTOONSTELLING.

Numbers 39 and 40 represent a lower version of the chair in the collection. Chair 41 by Auke Komter is also a collection piece. Source: 'De stoel gedurende de laatste 40 jaar', *De 8 en Opbouw*, 1935, no. 1, p. 8.

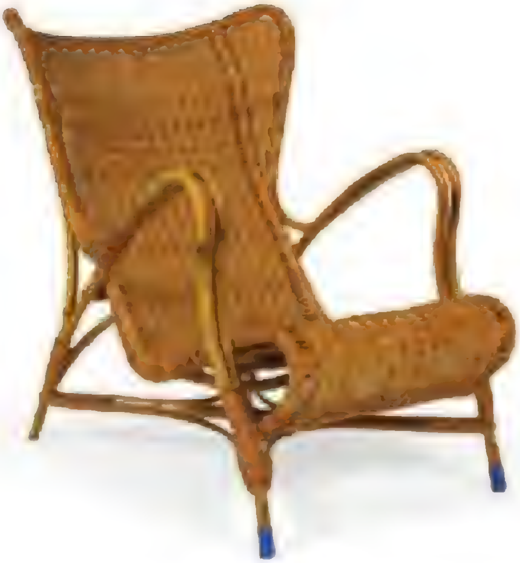


Unknown, easy chair (knob chair), type 1860-present, object approx. 1970
Inv. no. 20032100
Willow branches; willow wands
46 × 117 × 62.5 × 71.5 cm
Firma Wed. J. Ekhart & Zn., Noordwolde (Fr)
Lit: H. de Jong (ed.): *Stoelen*, Delft 1974, p. hout 06-03; J.M.W. van Voorst tot Voorst: *Meubels in Nederland, 1840-1900*, Antiek Lochem, Lochem 1998, p.187



Unknown, chair, around 1900?
Inv. no. 20032177
Rattan; split cane, pulp cane
45 × 102 × 53 × 52 cm
Unknown
Donation from ir. M. v.d. Meer

Ida Falkenberg-Liefrinck, easy chair, 1939
Inv. no. 20032255
Rattan; split cane, pulp cane
37.5 × 92.5 × 62.5 × 96.5 cm
Unknown
Lit.: I. Falkenberg-Liefrinck: Stalen of Houten Meubels, *De 8 en Opbouw*, 1935, no. 1, p. 9; J.W. de Gruyter, Rede van Jos.W. de Gruyter, uitgesproken ter gelegenheid van de opening der meubeltentoonstelling bij de fa. Metz & Co. te Amsterdam, *De 8 en Opbouw*, 1940, no. 25-26, pp. 215-216; 'Uitslag meubelprijsvraagWohnbedarf A.G. - Zurich', *De 8 en Opbouw*, 1940, no. 17-18, p. 168; E. Holsappel, *Ida Falkenberg- Liefrinck, de Rotan stoel als opmaat voor een betere woninginrichting*, Stichting Bonas Rotterdam 2000, p. 11; K. Kühnel, *Der Mensch ist ein sehr seltsames Möbelstück, Biographie der Innenarchitektin Liv Falkenberg-Liefrinck geb. 1901*,Trafo Verlag, Berlijn 2006, pp. 76-78
Donation from Mrs Sikkel-Franken, 2003

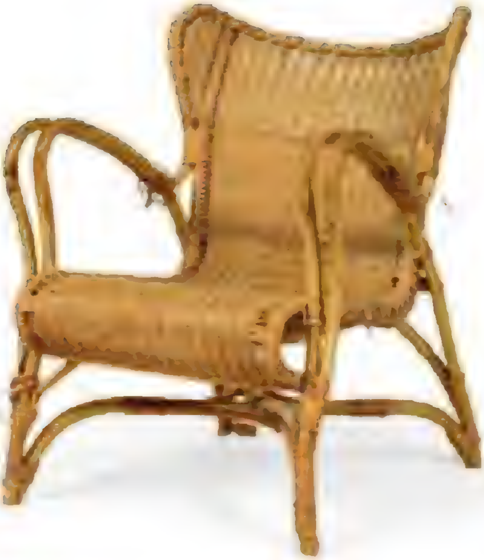


Easy chair with armrests. The supporting frame consists of curved cane that is wound with split cane only at the points of constructive fixation. Brass screws have been used at the connections. The seat and backrest consist of woven surfaces of cane pulp and split cane.

The so-called *Ear Chair* is the prototype that was designed as a part of the competition submission for the Wohnbedarf in Zurich in 1939. In conjunction with the high rattan *Ear Chair* (inv. no. 20032256), the chair won first prize in the 'Separate Furniture' category. The chair was later taken into production by Metz & Co, albeit it in a rather simplified form.

Besides this Ear Chair, Falkenberg-Liefrinck designed many other items of cane furniture. In Falkenberg-Liefrinck's case, the preference for rattan issued from social engagement. As she herself acknowledged in an article that she wrote for *De 8 en Opbouw* in 1935, tubular steel furniture provided the ideal solution for the modern interior, but was unfortunately much too expensive for normal working people. Rattan had approximately the same constructive properties as steel, but was much cheaper. In Amsterdam, she lived above a shop that sold cane furniture, and the ugliness of that furniture irritated her. She began to design cane furniture herself, and this was put into production by Lang & Zn in Ulft. The results impressed Elmar Berkovich, who worked as an interior architect at Metz & Co. He invited her to come a work for the Amsterdam company.

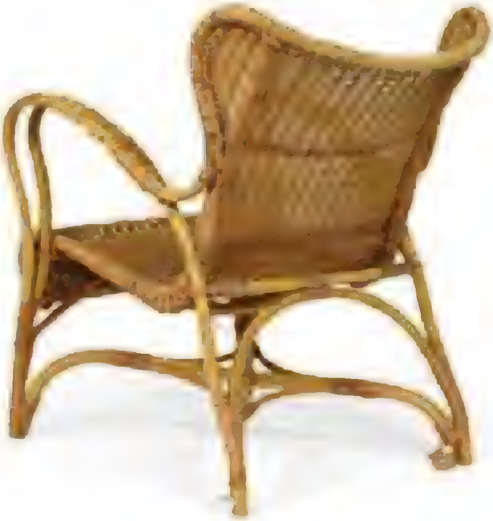
Falkenberg-Liefrinck enjoyed productive years at Metz & Co. However, the company allowed her little scope to express her socialist ideas regarding cheap and mass-produced furniture for normal working people. Metz & Co remained a store for the modern upper layer of the population. However, her interior designs for model houses displayed just how cane furniture could be fitted into the compact accommodation of working-class families and single people. She often showed how her designs could be combined with old furniture and how certain rooms could be made suitable for several functions. In some model interiors, she even displayed how cheap furniture from common shops could be applied in a practical manner, which was something that did not directly correspond to her work at Metz.

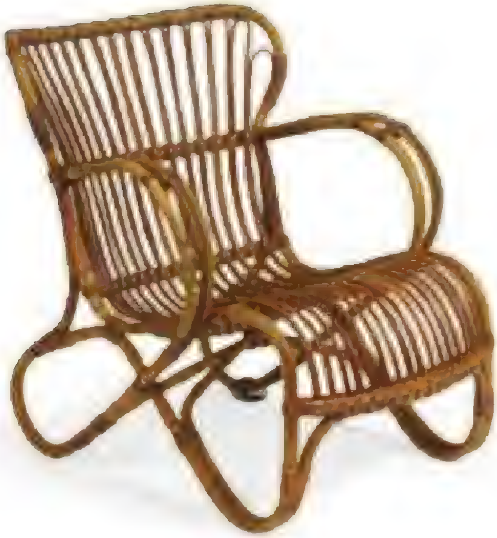


Ida Falkenberg-Liefrinck, easy chair, 1939
Inv. no. 20032256
Rattan; split cane, pulp cane
40 × 82.5 × 62 × 71 cm
Unknown
Lit.: 'Uitslag meubelprijsvraag Wohnbedarf A.G. – Zürich', *de 8 en Opbouw*, 1940, no. 17-18, p. 168; J.W. de Gruyter, 'Rede van Jos. W. de Gruyter, uitgesproken ter gelegenheid van de opening der meubeltentoonstelling bij de fa. Metz & Co. te Amsterdam', *de 8 en Opbouw*, 1940, no. 25-26, pp. 215-216; E. Holsappel, *Ida Falkenberg-Liefrinck (1901–). De rotan stoel als opmaat voor een betere woninginrichting*, Rotterdam 2000, pp. 11, 12, 52, 53; K. Kühnel, *Der Mensch ist ein sehr seltsames Möbelstück. Biographie der Innenarchitektin Liv Falkenberg-Liefrinck geb. 1901*, Berlin 2006, pp. 76-78
Donation from Mrs Sikkel-Franken, 2003

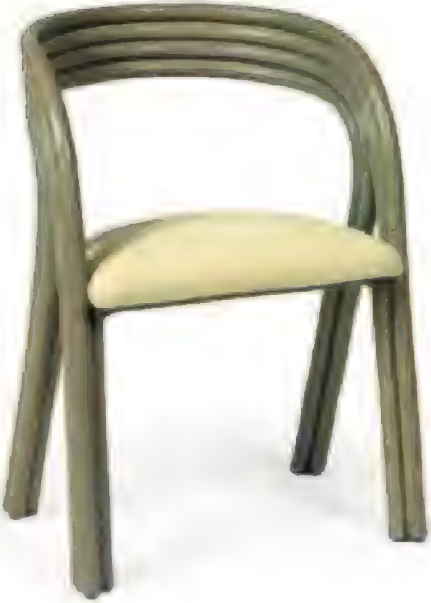
Easy chair with armrests. The supporting frame consists of curved cane that is wound with split cane only at the points of constructive fixation. Brass screws have been used at the connections. The seat and backrest consist of woven surfaces of cane pulp and split cane.

The so-called *Ear Chair* is the prototype that was designed as a part of the competition submission for the Wohnbedarf in Zurich in 1939. In conjunction with the low rattan Ear Chair (inv. no. 20032255), the chair won first prize in the 'Separate Furniture' category. The chair was later taken into production by Metz & Co, albeit it in a rather simplified form.





Unknown, easy chair, after 1945
Inv. no. 20032170
Rattan; split cane, rattan
34.5 × 69 × 60 × 77 cm
Unknown, model Belgische Acht



Axel Enthoven, chair, 1980
Inv. no. 20032143
Rattan (manou); wood, foam rubber, cotton
49 × 79 × 53 × 49.5 cm
Rohé Design, Noordwolde, model number RD 1530
Lit.: P. Vöge & B. Westerveld, *Stoelen, Nederlandse ontwerpen 1945–1985*, Amsterdam, 1986, p. 143

Dining room chair with armrests. The chair consists of rattan stalks with a diameter of 25 mm. that form the backrest, armrests and legs in a single sweep. They are grey stained. The rattan stalks are held together by a supporting steel tube under the seat. The wooden seat is upholstered with foam rubber, covered with light-grey mixed cotton.
In 1982 this chair was awarded the Mobica Prize and the Karlsruhe Prize.

Biographies

Hugo Alvar Henrik Aalto (1889–1976) Finland
Alvar Aalto was a pre-eminent Finnish modernist architect who was also known for his designs for furniture and glasswork. Aalto was one of the first and most influential architects of the modern movement in Scandinavia. He was a member of CIAM (Congrès Internationaux d'Architecture Moderne). Important works by Aalto include the Finlandia Hall in Helsinki, the Town Hall in Säynätsalo, and the campus of Helsinki University of Technology. The Aalto Vase (1936), is also world-famous; it refers to the contours of a Finnish lake. Alvar Aalto was a pioneer in the use of plywood and laminated wood in modern furniture.
PP. 224, 225, 233, 236, 239

Carlo Bartoli (1931) Italy
Bartoli studied at the Politecnico in Milan and began his career as an architect. He later also worked as an industrial designer. Bartoli worked for companies such as Arflex, Artelano and Kartell. He worked as an art director at Colombo Design and Segis.
P. 113

Karel Petrus Cornelis de Bazel (1869–1923) the Netherlands
Via an architectural course at night school in The Hague, De Bazel worked himself up from a simple carpenter to a fully-fledged architect and interior designer. From 1889 onward, De Bazel worked at the office of P.J.H. Cuypers in Amsterdam. After becoming acquainted with J.L.M. Lauweriks, they began a joint venture and a studio for architecture, applied art and the decorative arts. In 1904, De Bazel, in conjunction with others, set up the De Ploeg furniture studio, a counterpart of Berlage and Van den Bosch's 't Binnenhuis. Besides designing villas and offices, of which the Nederlandsche Handel-Maatschappij in Amsterdam (1920–1926) is the most well-known, De Bazel also designed glass for the Leerdam company from 1915 onward. He frequently applied Egyptian and Assyrian motifs in his architecture and furniture designs.
PP. 180, 181

Hendrik Petrus Berlage (1856–1934) the Netherlands
Hendrik Petrus Berlage was born in Amsterdam. After high school, he studied at the Eidgenössische Technische Hochschule in Zurich, where he came into contact with the ideas of the architects Gottfried Semper and Eugène Viollet-le-Duc. Having completed his studies, Berlage went to work at the office of T. Sanders, where he became a partner in 1884. In conjunction, they designed various buildings in neo-Renaissance style. Berlage began to work independently in 1889. His most famous design is the Koopmansbeurs (commodity exchange) in Amsterdam, with which Berlage definitively abandoned all historical styles and branched out into the modernist world. The same development also occurred in his furniture design. In 1900, Berlage founded the 't Binnenhuis furniture studio for modern household furniture, in conjunction with Van den Bosch.
PP. 176, 178

Harry Bertoia (1915–1978) Italy
Emigrated in 1930 from Italy to the United States, where he followed education at the Cass Technical College in Detroit until 1936. From 1937 to 1943 he had a scholarship to the Cranbrook Academy of Art in Michigan, where he was responsible for the layout and supervision of the metalwork studio. In 1943 he moved to California where, in conjunction with Charles and Ray Eames, he experimented with bending plywood. He also designed steel wire sculptures. In 1950, at the invitation of the Knoll company, he returned to Pennsylvania and designed a series of chairs in steel wire. After 1953, he worked for Knoll as an advisor and particularly as a sculptor.
PP. 34, 35

Jacques van den Bosch (1868–1948) the Netherlands
Furniture designer, interior architect and designer of pottery, tiles and dinner services for the Holland faience and tile factory. From 1885 to 1890, Van den Bosch took lessons at the *Kunst-Nijverheids-Teekenschool Quellinus* (Quellinus Applied Art and Drawing College) and at the *Rijksschool voor Kunstnijverheid* (State School for Applied Art), where he was taught by P.J.H. Cuypers among others. He subsequently obtained practical knowledge of the furniture-making profession at the Van Houtum Brothers joinery works. In 1893, he started up his own business as a designer for various furniture manufacturers. In 1900, in conjunction with Berlage, he set up the progressive interior design studio 't Binnenhuis. As a director of 't Binnenhuis, and as publicist, member of the board of the *Vereniging voor Ambachts- en Nijverheidskunst* (Association for Craftsmanship and Applied Art) and organizer of exhibitions, he played a prominent role in the Dutch world of applied art from 1900 to 1920.
P. 182

Marcel Breuer (1901–1981) Hungary
Breuer studied in Vienna for a short time and then continued his education at the Bauhaus (1920–1924). Having supervised the furniture studio there, he started up his own business along with Walter Gropius in Berlin in 1928. Between 1932 and 1934, he co-operated with the Wohnbedarf company in Switzerland. In 1935 he emigrated to the United Kingdom and in 1946 to the United States, where he became a successful architect. Prior to the war, Breuer's career was primarily based on furniture design. Originally he designed wooden furniture, under the influence of Rietveld, but his greatest achievement was the introduction of tubular steel furniture into the modern interior. In 1925, he designed his first chair from tubular steel and up to 1930 Breuer created a whole range of tubular steel furniture, initially for his own company called Standard Möbel, and then for Thonet after 1929. At Thonet, Breuer became involved in the conflict concerning the copyright to the cantilever chair, and he lost the rights to several of his designs to Mart Stam. In 1933, he developed a construction system for freely-suspended furniture made of aluminium, laminated wood or strip steel as an alternative to the cantilever principle. With this design, he won the first prize in the aluminium design competition in Paris in 1933. Inspired by Alvar Aalto, Breuer also designed a series of chairs for the English company of Isokon. The collection contains a few of his early tubular steel designs and one of the winning chairs in the aluminium design competition.
PP. 26, 28, 30, 37, 38

Hans Coray (1906 1991) Switzerland
Coray was a student of Romance Studies until 1929 and worked as a teacher at a secondary school from 1931 onward. Between 1932 and 1938, he concerned himself with graphology, astrology, religion and philosophy, and took an interest in metal constructions. His first design was the aluminium chair called *Landi*, which he displayed at the Landesausstellung (Swiss National exhibition) in Zurich in 1939. In 1941, he followed a metalwork course in Zurich. From 1945 onward, he was active as a designer, artist and art dealer. In 1983, he presented a solo exhibition at the Strauhof in Zurich.
P. 76

Gunnar Daan (1939) the Netherlands
Gunnar Daan studied at the University of Technology in Delft from 1959 to 1965. He subsequently worked for the Civielco constructor's company in Leiden and for the architectural office of K.L. Sijmons for several years. In 1971, he started up his own architectural office, which was based in Oosternijkerk in the province of Friesland from 1974, and moved to Birdaard in 2004. Nowadays the name of the office is *Gunnar Daan Doeke van Wieren architecten*, abbreviated to GDA or GD Architecten, but Daan left the firm in April 2005. He is known as a distinctive architect and visual artist who pays little attention to the tastes of the public and attaches more value to the opinion of colleagues. From 1990 to 1995, he was a professor of Constructive Integration at Delft University of Technology.
P. 132

Robin Day (1915) United Kingdom
Between 1934 and 1938, Day followed education at the Royal College of Art in London, where he specialized in furniture and interior design. During the Second World War, he taught at Beckenham School of Art and designed posters and exhibitions. In 1948, in conjunction with Clive Latimer, Day won the first prize in the category of Storage Furniture at the *International Competition for Low Cost Furniture* organized by the MoMA in New York. In doing so, he attracted the attention of the British furniture manufacturer Hille, who sought a designer to modernize its collection. Day designed a series of chairs, tables, desks and cabinets for Hille during a period covering many years, making use of the latest techniques for processing metal and wood.
Day's further career involved both large-scale prestigious projects, including furnishings for the Royal Festival Hall and the Barbican Centre, and designs for mass production.
In 1963 he designed the *Polypropylene Chair* for Hille, which was one of the best-selling chairs of all times, and in 1971 he came up with the *E school Chairs* series. After Hille had been taken over in 1983, he specialized in chairs for stadiums, auditoriums, waiting rooms, and suchlike.
In 2001 a retrospective exhibition entitled 'Robin and Lucienne Day – Pioneers of Contemporary Design' was held in the Barbican Centre. Perhaps this exhibition was a little premature, as Day continued to design furniture for twentytwentyone and SCP from 1999 to 2003, and in 2003 he produced the *Sussex Sofa* for Magis.
PP. 54

Charles Eames (1907–1978) United States **Ray Bernice Alexandra Kaiser Eames** (1912–1988) United States
Charles Eames studied architecture at Washington University in Saint Louis.
His interest in bent plywood dated from 1940, when he won, along with Eero Saarinen, the first prize for organically shaped furniture, in a competition organized by the Museum of Modern Art in New York.

Ray Eames studied painting under the tuition of Hans Hofmann from 1933 to 1939, and then began a weaving course at the Cranbrook Academy of Arts in Michigan in 1940, where she met Charles Eames who was the head of the Industrial Design department at that time. The couple married a year later and moved to California. In subsequent years they studied the possibilities of creating a cheap, mass-produced chair from plywood. The commission they received to design leg splints for the American Army enabled them to research the properties of the material further. In this period, they devoted effort primarily toward the development of a chair with a seat and a backrest made from a single sheet of plywood.

Ultimately, this did not bring the solution they were looking for. The *LCW Chair* demonstrates a different approach, where the backrest and the seat are two separate sections. In conjunction with the Evans Products Company, the chair was made suitable for mass production. The true sales success began a year later in 1946, when Herman Miller, a company that was oriented to the sale of modern furniture, took over the plywood department from Evans. In that same year, the Museum of Modern Art devoted a small exhibition to the work of Charles Eames. From that moment onward, the chair attracted worldwide attention. In the Netherlands, the chair stimulated various designers, and Rietveld was also inspired by the *LCW Chair*. In 1946 he designed the *Danish Chair* for the Tomado factory Dordrecht.
PP. 55, 60, 98, 100, 101, 228

Petrus Johannes Elling (1897–1962) the Netherlands
As an architect, Elling primarily designed houses prior to WWII, but after the war he also engaged in designing offices and station buildings. Elling also built various broadcasting buildings in Hilversum. He became a professor at Delft University in 1957. He is little known as a furniture designer.
P. 195

Axel Enthoven (1947) Belgium
Founder and director of Enthoven Associates Design Consultants in Antwerp. Enthoven Associates is a research office specialized in product development and innovative research. Since 1989, Axel Enthoven has been a professor at the Design Academy in Eindhoven and head of the 'Mens en Mobiliteit' (Humans and Mobility) department.
P. 255

Hartmut Esslinger (1944) Germany
At the age of 25, Esslinger completed his study as an industrial designer at the Schwäbisch Gmünd technical school in Germany, and founded his own office, which has been known as Frog Design since 1982. His first design was the 'full plastics' colour television and hifi-series entitled 'Wega system 3000', which brought him international renown. Esslinger also worked with Sony and Apple Computers, and other important clients were Microsoft Windows, Siemens, NEC, Olympus, Hewlett

Packard, Motorola, and General Electric. Esslinger taught at the Design College in Karlsruhe and has been teaching at the University of Applied Art in Vienna since 2006. Besides various awards and prizes, Esslinger also received an honorary degree from the Parsons School of Design in New York in 1996.
PP. 114, 115

Ida Falkenberg-Liefrinck (1901–2006) the Netherlands
Falkenberg-Liefrinck was educated as an interior architect and worked for architect J.J.P. Oud among others. She regularly wrote articles for *de 8 en Opbouw*, the magazine of the architects of the Nieuwe Bouwen movement, in which her designs for interiors were also depicted. She was one of the few women who played an active role in the Nieuwe Bouwen movement. Falkenberg-Liefrinck is primarily known for the development of and propaganda for cane chairs. But it was only after WWII that these chairs, of which she designed several variants in the thirties, would capture a place in Dutch interiors on a large scale. Her experiments with new furniture forms, which were stimulated by Metz & Co in Amsterdam, were consistently influenced by her desire to create good and pleasant accommodation for the less-prosperous sections of the population in the Netherlands. After WWII, Falkenberg-Liefrinck realized various projects in the erstwhile DDR.
PP. 250, 253, 254

Frog Design (1982) Germany
Since 1982, this has been the name of the design office founded by Hartmut Esslinger, originally in Altensteig, but since 2004 in Herrenberg Schwarzwald, Germany. It now has branches in the United States and Japan. See also Hartmut Esslinger.
PP. 114, 115

Wim van Gelderen (1903–1992) the Netherlands
Van Gelderen worked as a furniture designer for the Rotterdam firms of D3 and Fanametaal. In the forties, he was the editorial secretary of *de 8 en Opbouw* magazine. He became known for his furniture designs for Spectrum. He was engaged in material savings: most of his post-war furniture is made of plywood, sawn from a single sheet, with the least possible wastage.
P. 229

Willem Hendrik Gispen (1890–1981) the Netherlands
Although educated as an architect, Gispen was more interested in applied art. In 1916, he started up a metalwork studio, where he began producing lamps and experimenting with tubular furniture. His first catalogue appeared in 1930 and most models were designed by Gispen himself, with the aid of C.J. Hoffmann. Gispen was a member of the *Opbouw* group and had good contacts with the modern architects in Rotterdam. This led to projects such as the Van Nelle factory and the Bergpolder block of flats, which were furnished with Gispen creations. Most of his designs were not really original, but were nevertheless of good quality. His company was an important producer of modern lighting and tubular steel furniture. In 1935, Gispen relocated his company from Rotterdam to Culemborg. After WWII, Gispen left the company and founded a new firm: Kembo.
PP. 22, 50, 62, 72, 85

Dick Greiner (1891–1964) the Netherlands
Greiner started his career at the office of Eduard Cuypers, to found his own company a little later, in 1920. He achieved most renown from his modern, business-like design of the houses in Betondorp in the Watergraafsmeer, a garden city in Amsterdam. After that, his architecture became more expressive, influenced by the Amsterdam School. During and after WWII, Greiner worked on the reconstruction of Middelburg, Yerseke and Schore.
P. 189

Marco Groenen (1970) The Netherlands
Marco Groenen graduated from the Hogeschool voor de Kunsten (Utrecht School of the Arts) in 1993, and has worked as an independent designer since then. In 1994 he founded his office, Onderneming in Architectuur (Enterprise in Architecture), which is primarily engaged in architectural assignments. Besides these regular assignments, OA also participates in educational projects, and allows itself scope for research and experiment in self-initiated projects.
Other furniture collections: Marco Groenen developed *Poplar* in conjunction with Houtatelier Maris: this is an exterior furniture collection of modified poplar wood, and is currently working on the innovation of the Gelfort's garden furniture collection.
P. 234

Willy Guhl (1915–2004) Switzerland
Guhl followed a furniture-making course in Schaffhausen and started up his own furniture studio in 1939. After the war, in 1948, Guhl participated in the design competition organized by the Museum of Modern Art in New York for Low-Cost Furniture Design. From 1951 to 1980, he taught at the Kunstgewerbeschule in Zurich. Besides his legendary garden chair for Eternit, Guhl designed a number of other products in this material.
P. 96

Krijn Hamelink (1947) the Netherlands
After completing his studies at the Rietveld Academie in 1969, Hamelink was employed by the office of Kho Liang Ie where he worked with new materials and production techniques. Since 2002, he has been working with VDS. Hamelink has now won numerous design prizes for chair designs.
P. 70

Peter Hvidt (1916–1986) Denmark
Peter Hvidt was born in Copenhagen, followed the furniture-maker's course there, and started up his own design office in 1942. In 1944 he entered into a co-operation with the Danish architect Orla Mølgaard Nielsen, which lasted until 1975. The duo designed the *Portex Chair*, which was the first stackable and mass-produced chair in Denmark. In 1947, the *AX Chair* came onto the market, a chair that had been designed in conjunction with the manufacturer Fritz Hansen. The innovative lamination technique applied for the *AX* made use of layers of beech upon a hardwood core. The chair could be delivered in separate sections, making it easy to transport. In the 1950s, the *AX* was a great commercial success, and Hvidt won several international design prizes. The design duo continued working with manufacturers and had a major influence on the style that came to be known as 'Scandinavian modern'.
P. 238

Robert van 't Hoff (1887–1979) the Netherlands
Robert van 't Hoff, born in Rotterdam, travelled to the United States in 1913, where he visited Frank Lloyd Wright. Once back in the Netherlands, he designed two houses in Huis-ter-Heide which were both strongly influenced by Wright's ideas. In 1916 he met Theo van Doesburg and J.J.P. Oud, with whom he would set up the *De Stijl* movement a year later. In 1918, he was the first of this group to establish contact with Gerrit Rietveld, who designed and produced the furniture for Huis-ter-Heide. After this acquaintance, Rietveld decided to become an associate of *De Stijl*, but he withdrew from the group in 1919, believing that the ideals of the group would not have the opportunity to be realized in the near future. He had seen *De Stijl* primarily as a way of effecting a communist revolution via non-figurative representation. When the revolution did not spread from Russia in the following years, Van 't Hoff also withdrew from the group. After 1920 he created almost no further designs, and he departed for the UK definitively in 1937.
P. 213

Matthieu (1815–1889) and **Willem Horrix** (1816–1881) the Netherlands
The Horrix brothers learned the trade in their family's furniture workplace in The Hague. They completed their education in Paris. Once back in the Netherlands, they took over the management of the company. In 1850, they started up the Anna Paulowna Furniture Factory, which became the largest furniture factory in the Netherlands and the first to make use of a steam machine. Nevertheless, the furniture was still made mainly by hand. Matthieu Horrix created the designs in various, generally historical styles.
P. 168

Arne Jacobsen (1902–1971) Denmark
One of the most important Danish architects and designers. He was trained as a bricklayer, but completed his studies at Technical College in Copenhagen in 1924. In 1925, he won a silver medal at the World Exhibition in Paris with a design for a chair. He studied architecture at the Royal Academy of Art in Copenhagen until 1927. From 1930 to 1971, Jacobsen ran a very productive architectural and design office. His most renowned projects include the Bellevue housing complex (1930–1935) in Copenhagen and the Town Hall in Aarhus (1945–1947). His most famous chair design is the *Ant Chair*, dating from 1952, and the later variants of this. Jacobsen won various awards and received an honorary degree from Oxford in 1966.
PP. 56, 57, 58, 83, 97

Jan de Jong (1917–2001) the Netherlands
After completing a study of Architecture at the College in Tilburg, De Jong proceeded to a study of ecclesiastical architecture in Den Bosch. He felt strongly attracted to Dom Hans van der Laan's theory of harmony of the plastic constant, subsequently developing his own form language and distancing himself from the past. On the basis of their close co-operation, Dom Hans van der Laan regarded De Jong as the appropriate person to further advance his ideas.
De Jong designed ten churches that were regarded as typical of the Den Bosch School, and also town halls, housing projects, and a monastery. De Jong also designed the Town Hall in Budel (1962), including the chairs in the council chamber.
P. 194

Finn Juhl (1912–1989) Denmark
Finn Juhl began his architectural education at the Royal Academy of Fine Arts in Charlottenborg in 1930, but he did not complete his study. In 1941, he started up his own architectural office and a year later he was admitted to the Federation of Danish Architects. In 1937, Juhl had made his debut as a furniture-maker at the annual exhibition of the Furniture-maker's Guild of Copenhagen in the Museum for Decorative Arts. His furniture was the focus of serious criticism just as often as it won prizes. A much-heard comment was that they were too sculptural and oriented toward aesthetics rather than toward the sober functionality for which Scandinavian design was known. Juhl maintained however that the art of design is a quality of both the sculptor and the furniture-maker: 'A chair is not only a decorative object in space, it is also a form and space in itself.'
P. 190

Kho Liang Ie (1927–1975) Indonesia
Liang Ie studied at the Institute for Applied Art (IVKNO) in Amsterdam from 1950 to 1954. He began his career with the *Goed Wonen* Foundation ('Good Living'), which brought him several good contacts within the furniture industry. In 1957 he began to work with Artifort, were he fulfilled the versatile function of designer-supervisor-art director. At the same time that he was hired by Artifort, Kho Liang Ie was also employed by the much more modest CAR (the initials of the founder C.A. Ruigrok) in Katwijk. The company produced tubular constructions for canteen chairs and tables, terrace furniture, office furniture and meeting hall chairs. His role within CAR was actually much the same as that with Artifort, although on a freelance basis. Within the company he worked with designers like Jan Ruigrok, Frans de la Haye, Klaas de Poel, and Krijn Hamelink.
PP. 60, 61, 65, 67, 102

Ib Kofod-Larsen (1921) Denmark
Kofod-Larsen studied at the Danish Royal Academy and won the Holmegaard glass competition in 1948 and an annual prize awarded by the Furniture Makers Guild. He worked as a designer for various furniture manufacturers, including Christensen & Larsen, Faarup Møbelfabrik, and Fredericia Furniture.
The chair in the collection was displayed during the exhibition of the Furniture Makers Guild in Denmark in 1950. Kofod-Larsen created several similar chairs, occasionally with a steel frame. During the Guild's exhibition in 1956, another renowned chair by Kofod-Larsen was displayed, the U-56 or Elizabeth Chair. This chair consists of a sculptural tub, upholstered in leather, fixed in a light and fluent teak frame.
P. 192

Nico Kralj (1921), Slovenia
Kralj studied architecture in Ljubljana. On graduating (1952) he worked with the Stol company in Kramnik until 1960. After this, he became a teacher and later professor at the Faculty of Architecture in Ljubljana. Kralj was a pioneer of industrial design in Slovenia, becoming internationally famous with his *Rex* folding chair.
P. 142

Friso Kramer (1922) the Netherlands
Friso Kramer first attended Montessori School, then the Industry and Electrotechnical College, and then studied Interior Architecture at the Institute for Applied Art in Amsterdam. Kramer began his career at the office of J.P. Kloos in 1945, and worked with Frans Paulussen for a short time. From 1948-1963 he worked as a designer with De Cirkel, a factory for steel furniture and a subsidiary part of the Ahrend company. In 1963 he started up the Total Design company in conjunction with Wim Crouwel, Benno Wissing, Paul and Dick Schwartz. From 1971 to 1983, he was the art director and member of staff of the Ahrend Groep. Friso Kramer also fulfilled a number of director's functions. He was member of the board of the Rietveld Academy, the Art Council of Amsterdam, member of the Council for Industrial Design and of the International Design Consortium. Kramer also taught at the Academy of Art in The Hague and was a member of various international juries. His famous designs include two concrete benches with a low and a high backrest for public areas in Deventer, Schiphol, Hoorn and Amsterdam, among other places, as well as the *Revolt Chair* (1953, 1993) and the *FKS* stackable chair and table (1997).
PP. 78, 79, 80

Vico Magistretti (1920–2006) Italy
After completing his education as an architect at the Politecnico in Milan, Magistretti start his career as a designer in the 1960s. His first chair was put into production by the Cassina company in 1960. From that moment onward, he only produced designs for industrial production and, besides Cassina, he also worked for Asko, Artemide and Rosenthal. His background as an architect enabled Magistretti to conceive innovative constructions for his synthetic designs. Magistretti had great significance in Italian design in the period after WWII. He won a golden medal (1951) and a Grand Prix (1954) at the Triennale in Milan. Many of Magistretti's designs belong to the design classics.
P. 108

Erik Magnussen (1940) Denmark
Magnussen completed his training as a potter at the Danish School for Applied Art and Industrial Design in 1960. Besides ceramics, he has also worked with porcelain, steel, glass and synthetic material. Magnussen also designed tubular steel chairs, including the *Zdown* folding chair, dating from 1965, and bar and school chairs from a single continuous length of tubing for the Paustian company in Copenhagen in 1989. Many of his designs for user items and furniture have been great commercial successes. Magnussen has also won a number of prestigious prizes.
P. 40

Just Meijer the Netherlands
Meijer became head of the Kembo design team in 1967, after which the company grew to become one of the most important suppliers of project furniture in the Netherlands. An important step was taken in 1976, when the introduction of the *Upsilon* series meant a transition from traditional to industrial production. Following the Mennen synthetic chair dating from 1971 for the Pastoe company, the *Upsilon* was the second chair produced by a Dutch company that was completely made of synthetic material.
P. 116

Bruno Mertens (1916) the Netherlands
Mertens was active in the Netherlands as an architect, painter and sculptor. He emigrated to New Zealand in 1994.
P. 195

C. M. van Moorsel (1892–1962) the Netherlands
Under the influence and guidance of his neighbour H.P. Berlage, Van Moorsel opted for a study of architecture at Delft University of Technology. At the beginning of his career, Van Moorsel was interested in modern ideas. The influences of *De Stijl* movement are visible in his design for a shop dating from 1921. However, his work gradually became permeated by his religious background and Van Moorsel began to emphasize the significance of ecclesiastical architecture for the community. As the founder and editor-in-chief of the *Katholieke Bouwblad* (Catholic Architecture magazine), Van Moorsel could express his ideas further.
PP. 187, 188

Orla Mølgaard-Nielsen (1907–1993) Denmark
Orla Mølgaard-Nielsen was born in Aalborg, where he learned the profession before starting on formal education in Copenhagen. At the Royal Academy of Art he became acquainted with the new science of anthropometrics, which he could apply to make his furniture more comfortable. After completing his studies, he worked with a number of architectural offices, including those of Kare Klint and Arne Jacobsen. He began his working co-operation with the Danish architect Peter Hvidt in 1944. The duo designed the *Portex Chair*, the first stackable and mass-produced chair in Denmark. In 1947, the *AX Chair*, designed in conjunction with the manufacturer Fritz Hansen, was placed on the market. The innovative lamination technique that was applied to the *AX* made use of layers of beech on a hardwood core. The chair was deliverable in separate sections, thus making it easy to transport. The *AX* was a great commercial success in the 1950s and it won many international prizes. The design duo continued working with manufacturers and had great influence on the style that became known as 'Scandinavian modern'. The co-operation between these two Danish architects lasted from 1944 to 1975.
P. 238

Bruno Ninaber van Eyben (1950) the Netherlands
Van Eyben graduated with merit from the Academy for the Visual Arts in Maastricht in 1971. He completed a course a jewellery designer but eventually chose another direction, the development of industrially producible user items. In the 1970s, he designed his armband watch (1973), the collar watch (1976) and the fluorescent lamp (1977). These classics have been included in various museum collections. Van Eyben gained his greatest fame in 1980 with the design for a new Dutch coin series with a portrait of Queen Beatrix. 1997 witnessed the start of the 'Bruno Ninaber van Eyben Design & Production' office. He also designed the Dutch side of the new Euro coin. In July 2003, he was appointed professor of Design at the Faculty of Industrial Design at the University of Delft.
P. 232

Jacobus Johannes Pieter Oud (1890–1963) the Netherlands
Oud was born in Purmerend and studied in Amsterdam and Delft. Between 1918 and 1932, he was the City Architect of Rotterdam, where he was responsible for much social housing by means of which he obtained considerable international renown. In 1915, he met Theo van Doesburg and became a member of *De Stijl* in 1917, but left the group after a conflict with Van Doesburg in 1921. He designed his first tubular steel furniture for the interior of Villa Allegonda in Katwijk aan Zee, and for his worker's houses at the Weissenhofsiedlung in Stuttgart, both in 1927. In 1933, Oud designed a series of easy chairs for Metz & Co and in 1938 for the *Nieuw Amsterdam* ocean liner. After WWII, he designed tubular steel furniture for the Spaar Bank of the City of Rotterdam.
PP. 53, 68, 69

Verner Panton (1926–1998) Denmark
Panton studied at the Royal Academy of Art in Copenhagen, gaining his diploma in 1951. At the start of his career he worked for the architect and furniture designer Arne Jacobsen. In 1955 Panton launched his own office, where he designed the 'House from Cardboard' (1957), among other things. In 1963, Panton left for Basle in Switzerland, where he was active as a designer for years. Panton was one of the first Scandinavian designers to work with materials such as plastic, foam rubber and synthetic material. In the 1960s and 70s, his colourful designs of interior landscapes, furniture and fabrics were characteristic of the period. In 1959-1960 Panton designed the cantilever synthetic chair from a single piece of plastic, the *Panton*. This chair was created in conjunction with the Vitra company and the Bayer chemicals company, and is still produced, although now from a different synthetic material.
PP. 47, 110

Jaap Penraat (1918–2006) the Netherlands
Penraat was an interior architect and industrial designer, of plaster tiles and figures among other things. He worked with Friso Kramer, and they jointly designed chairs for Rietveld's layout of the UNESCO head office in Paris in 1958. During WWII, he saved the lives of hundreds of people, by forging identity documents. In 1958, he emigrated to the United States.

Philippus
P. 105

Han Pieck (1924) the Netherlands
Han Pieck was the son of exhibition architect, graphic designer, draughtsman and painter Henri Christiaan Pieck (1895–1972), and nephew of the illustrator Anton Pieck. From 1939 to 1941, Han Pieck studied at the Institute for Applied Art in Amsterdam, the present-day Rietveld Academie. Here he was taught by Mart Stam and Johan Niegeman, among others, but he did not complete his study. He worked as a furniture designer in the Netherlands, Great Britain and Brazil, and is primarily known in the Netherlands for the introduction of the laminated wood chair made of a single sheet of wood. After a series of setbacks with the production of the *LAWO* chair, less than a thousand examples were ultimately sold. Pieck then worked for a time in the UK, where he designed a smaller laminated wood chair, the *Bambi*, which remained in production for around two years. Pieck emigrated to Brazil in 1953, where he worked with various furniture manufacturers.
P. 230

Giancarlo Piretti (1940) Italy
After graduating, Piretti worked as an art teacher at the Art Academy of Bologna, where he was a teacher of interior architecture from 1963 to 1970. At the same time, he began to design furniture for Castelli, where he was the head designer until 1972. In 1969, he designed the extremely successful folding chair, called *Plia*. Later he worked for a subsidiary of Castelli, Castilia. At the end of the 1970s, he worked with Emilio Ambasz on ergonomic office furniture, including the office chairs the *Vertebra*, dating from 1977, and the *Dorsal*, dating from 1981. In the course of his career he won many design prizes, such as the Rosco Award and the G Mark in 1994.
PP. 42, 43, 64

Gio Ponti (1891–1979) Italy
Giovanni Ponti studied architecture at the Politecnico in Milan, graduating in 1921. He began his career as a designer with the Richard Ginori ceramics factory in 1923. From 1928 onward, he worked as the editor-in-chief of the *Domus* magazine. From that moment, with the exception of a short break between 1941 and 1948, that magazine was his home. He obtained his first architectural assignment in 1926: a villa in Garches for Tony Bouilhet. His statement that it is impossible to distinguish between art and technology is best expressed in the Pirelli Tower in Milan, dating from 1956. Partly thanks to the co-operation with the concrete wizard Luigi Nervi, Ponti managed to create one of the most gracious towers of the modern era. The building is regarded as Europe's most important contribution to high-rise building. In the 1930s, Ponti designed chairs for the Beltrami, Columbus, Kardex and Parma companies. Particularly the Beltrami chairs were very voluminous, forming a great contrast with his later design for the *Superleggera*, which is extremely light and transparent.
P. 160

Potter
P. 105

Jean Prouvé (1901–1984) France
Jean's father, Victor Prouvé, was the founder of the École de Nancy, a school of applied art that would become an important centre for Art Nouveau. From the age of 15 years onward, Prouvé worked as an apprentice with artistic smiths, and he began his own smithy in Nancy in 1923. His designs, some of which are in Art Deco style, attracted the attention of Pierre Jeanneret, his cousin Charles-Edouard (Le Corbusier), and Robert Mallet-Stevens. Due to the increasing use of industrial semi-manufactures such as steel sheeting which only needed folding and bolting or welding, the profession radically changed character. Instead of becoming a traditional smith, Prouvé became an industrial entrepreneur, leading an innovative company. The majority of the factory production consisted of furniture. In his designs, Prouvé started with constructive considerations, and the properties of the material were used in an innovative way.
PP. 36, 77

Ingmar Relling (1920–2002) Norway
Relling worked at the Vestlandske Møbelfabrikk (furniture factory) from the age of 16 years onward. After this, he followed an Interior Architecture and Furniture Design study at the Statens Händverks og Kunsthøgskole. On graduating, he worked with the Rastad & Relling design office, until he opened his own office in 1950. In the first few years of this office, he was primarily active as an interior architect, creating designs for schools, hotels and churches among other things. After 1960, Relling worked exclusively on furniture design, after which he developed to become one of the most renowned furniture designers in Norway. He made his international breakthrough with the *Siesta* chairs series, which was characterized by an innovative construction of beech plywood. For the rest of his career, he designed mainly easy chairs made of laminated beech, or chairs with a similar construction in steel. He had a major influence on Scandinavian modern design.
P. 240

Gerrit Thomas Rietveld (1888–1964) the Netherlands
Gerrit Rietveld, born in Utrecht, worked for his father as a furniture-maker. In 1911 he started out his own furniture-making business and also began a study of architectural drawing under the supervision of P.J. Klaarhamer. He came into contact with the ideas of *De Stijl* movement via Van 't Hoff and Van Doesburg, and he joined the group in 1919. In 1923, under the influence of Van Doesburg, he painted his wooden easy chair, which he had designed in 1918, in the colours of *De Stijl*. This was the origin of the *Red and Blue Chair*. In 1924 Rietveld designed the Schröderhuis in Utrecht, an architectural manifestation of the aesthetics of *De Stijl*, but it was also an example of a simple, modern interior. Rietveld also attended the founding meeting of the CIAM in La Sarraz in Switzerland in 1927. He divided his time between the design of architecture and of furniture, primarily chairs, an activity in which he experimented with metal as well as wood. But he was generally regarded as an artist and furniture-maker. Even although he was also responsible for a number of buildings he was never seen as a fully-fledged architect. Rietveld taught at the art colleges of Rotterdam and The Hague, and participated in various exhibitions. After WWII, he designed the Dutch pavilion in Venice (1954) and, between 1954 and1963, the buildings of the academies in Amsterdam and Arnhem. In 1964, Delft University of Technology gave Rietveld an honorary degree for his 'outstanding service in the renewal of architecture and furniture design, particularly for the creative contributions to the synthesis of modern technology, spatiality, and form'.
PP. 48, 62, 74, 206, 208, 210, 214, 216, 226

Wim Rietveld (1924–1985) the Netherlands
After completing his education at technical school, Wim Rietveld, the son of Gerrit, followed a study to become an instrument-maker. In 1950, he started on a study of industrial design at evening classes at the Academy in The Hague. Willem H. Gispen showed interest in his final-exam work and Rietveld was given a job at the Gispen company, where, from 1953 onward, he designed primarily office furniture as well as living-room lamps and 'furniture for the simple interior'. An example of his work is the 1407 easy chair, which was given a golden medal at the tenth Triennale di Milano in 1954. The point of departure for his designs was: 'well-formed, solid, practical and cheap'. In 1973 he was appointed extraordinary professor at the Faculty of Industrial Design at Delft University of Technology.
PP. 54, 62, 80

Alexander Michailovich Rodchenko (1891–1956) Russia
Rodchenko was educated at the Art Academy in Kazan and then at the Stroganov Academy in Moscow. From 1915-1916 onward, he began to create abstract geometrical compositions and closely approached the constructivist direction championed by Tatlin. After the Revolution, he became involved in various avant-garde groups and was active in diverse art genres: photography, film, advertising and design. For the Soviet pavilion at the Exposition des Arts Décoratifs in Paris in 1925, which Konstantin Melnikov had designed, Rodchenko created an interior of a worker's club. The chess chair in the collection was a part of that interior.
P. 212

Alberto Rosselli (1921–1976) Italy
Two years after WWII, Rosselli graduated from the Politechnico in Milan. In complete correspondence with the post-war reconstruction problems in Italy, Rosselli devoted his efforts to the issue of industrial production and the role the industrial designer could play in this context. He was given the opportunity to vent his ideas on this topic in a column called 'Disegno per l'Industria', which he wrote for the *Domus* magazine from 1949 onward. Gio Ponti was the editor-in-chief of this magazine. Although the ideas and approach to design of these two greatly diverged right from the outset, it is clear to see just what an impact Ponti's ideas had on Rosselli. From 1950 to 1970, Rosselli worked at Ponti's architectural office. He was one of the architects who worked on the Pirelli Tower. In 1952, Rosselli founded the *Stile Industria* magazine, with the aim of creating a favourable climate for the development of industrial design in Italy.
P. 112

David Rowland (1924) United States
Rowland studied under László Moholy-Nagy and then at the Cranbrook Academy of Art in 1950 and 1951. From 1952 to 1953, he worked as an assistant to Norman Bell Geddes in New York. In 1953, Rowland began his own office in New York. He was awarded a golden medal at the Triennale di Milano in 1964 for his design for a meeting-hall chair that could be very compactly stacked (40/4).
P. 32

Richard Sapper (1932) Germany
Sapper is an engineer and designer who worked in Milan in the period from 1958 to 1970. He is the son of a painter and is a very talented draughtsman himself. After studying Business Economics at the University of Munich (1952-1956), he worked in the design department of Mercedes-Benz. In 1958 he moved to Milan, where he designed user items designed for various well-known manufacturers (including Alessi, La Rinascente) and design offices (including Gio Ponti, Alberto Rosselli) until the end of the 1960s. He also cooperated with Marco Zanuso on a number of product designs. In 1970 he founded his own design office in

Stuttgart and two years later he created the renowned design for the *Tizia* halogen lamp. Sapper also worked as an advisor to Fiat and Pirelli, and in 1980 he began on the worldwide product design and as a company-image advisor with IBM.
Sapper believes that a designer ought to be fully up to date with the production technology that is necessary to implement a design. His work displays a combination of German functionality and Italian elegance: in addition to being functional the form must also be significant.
P. 106

Frits Spanjaard (1889–1978) the Netherlands
Spanjaard first followed the Architecture course at Delft University of Technology. During the education, under the influence of Professor Sluyterman, he developed great interest in interior architecture. Spanjaard began his career as a draughtsman with the Pander & Sons company in The Hague. In 1919, he became the artistic director of the L.O.V. (Labor Omnia Vincit) furniture factory, where his work was inspired by Scandinavian farmstead interiors. From 1923 onward, Spanjaard worked with Cor Alons, a designer from The Hague, and his work took on a more modern look. One of his most important assignments was the interior of the Council Chamber in Utrecht (1935) and, after WWII, the interior of the Town Hall in Enschede.
P. 193

Theo Tempelman (1931) the Netherlands
Tempelman attended the Interior Architecture course at the Academy for Art and Industry in Enschede. He created his first designs in conjunction with Hein Salomonson, with whom he had an architectural office, along with a third partner, Rik Egberts. From 1960 onward, he also worked as a designer for the A. Polak furniture factory, which was later taken over by Exquis. His meeting-hall chair, the *AP 40*, was the first tub chair made of synthetic material produced by a Dutch manufacturer. Tempelman was an associated teacher at the Rietveld Academy, the Academy for Art and Industry in Enschede, and the Royal Academy for the Visual Arts in The Hague.
P. 104

Maria Tenicheva (1858–1928) Russia
Maria Tenicheva, originally called Dagmar, was the daughter of Christian IX of Denmark. She married Prince Tenichev, a rich entrepreneur. Inspired by the artists' colony at Abramtsevo, which had become a centre of realistic and national art in Russia from 1870 onward, the Princess also set up an artists' colony at Talashkino in 1894. This became an influential artists' community, which used national motifs in a folkloristic way. The Princess herself also designed furniture.
PP. 196, 198, 200

Marcel Wanders (1963) the Netherlands
Wanders graduated *cum laude* in Arnhem and runs his own office in Amsterdam. He has taught at several art academies and won various prizes. He made his breakthrough with his *Knotted Chair*, dating from 1996, for which he received the Rotterdam Public Design Prize 1997. His designs have been included in the collections of various museums.
P. 117

Jan Wils (1891–1972) the Netherlands
From 1903 to 1907, Wils followed a course in Applied Art at the Burgeravondschool (nightschool) in Alkmaar, where he also received his technical college diploma. After this he undertook various study trips, primarily to Germany. In 1912, he produced his first major work, a car garage for the Stikkel, Olt & Tenzeldam company in Alkmaar. In 1914, he was employed by Berlage, who brought him into contact with the work of Frank Lloyd Wright. Two years later, Wils met Theo van Doesburg, with whom he would co-operate later. In 1917 Van Doesburg involved him in the newly-founded *De Stijl* magazine. The influences of Berlage and Wright stimulated Wils to create his characteristic cubist brick architecture, as in the De Papaverhof housing scheme in The Hague and De Dubbele Sleutel hotel in Woerden. Wils gained much renown with the construction of the Olympic Stadium (1924) and the Citroen garage (1928) in Amsterdam. In his voluminous oeuvre, his furniture design, which was largely influenced by *De Stijl* ideas, occupies only a modest place.
PP. 183, 184, 204

Marco Zanuso (1916–2001) Italy
Zanuso was a prominent Italian architect and designer. He studied architecture at the Politecnico in Milan (1935-1939) and founded his own office for architecture, urban planning and industrial design in 1945. Zanuso was the publisher of *Domus* (1946-1947) and *Casabella* (1947-1949). From 1948 onward, he experimented with foam rubber for seats for Pirelli, which resulted in a number of chairs manufactured by Arflex.
From 1958 to 1977, he co-operated with Richard Sapper, which produced a large number of original and innovative designs for furniture and electronics, including the *4999/S*, a stackable polyethylene children's chair. In 1956, Zanuso was the co-founder of the Associazione per il Disegno Industriale, of which he was also the chairman from 1966 to 1969. His most important architectural works are the Olivetti factory buildings in Buenos Aires and Sao Paulo (1955-1957), the Necchi building in Pavia (1961-1962), and the IBM factories in Segrate, Milan and Palomba (1974-1982).
P. 106

Alexei Prokofievich Zinoviev (1880–1941) Russia
Alexei Prokofievich Zinoviev was an artist and decorator who was a member of Princess Maria Tenicheva's artists' colony in Talashkino. A number of his chair designs are known.
PP. 198, 200

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Unknown,
late 18th century (?)
Inv. no. 20032116

Unknown, 19th century
Inv. no. 20032208

Unknown,
type 1600–1900
Inv. no. 20032113

Unknown, 19th century
Inv. no. 20032112

Unknown, 1850–1900 (?)
Inv. no. 20032206

Unknown, 1850–1900
Inv. no. 20032105

Unknown, 1900–1950
Inv. no. 20032097

Unknown, 1920–1950 (?)
Inv. no. 20032184

Comprising the effort of more than a century of collecting chairs, the Faculty of Architecture of the TU Delft can pride itself on having one of the major furniture collections in the Netherlands. Set up as an educational tool, the collection has offered knowledge about materials, construction and typology to students and designers. In the catalogue, the entire collection of over 240 chairs is presented for the first time. Each object is accompanied by images and a thorough description. Also, the book offers comprehensive texts on key designs in the collection, showing the diversity of the collection which consists of world famous designs, 17th, 18th and 19th century designs, everyday household chairs and rare pieces of furniture that have never been published before. Among the designers presented are Verner Panton, Gerrit Th. Rietveld, Hendrik Petrus Berlage, Jean Prouvé, Marcel Breuer and Droog Design.

Unknown, 1925–1975 (?)
Inv. no. 20032183

Unknown, 1925–1974 (?)
Inv. no. 20032166

Unknown, second half of the19th century
Inv. no. 20032233

Unknown,
approx. 1825–1875
Inv. no. 20032155

Unknown,
approx. 1900 (?)
Inv. no. 20032219

Unknown, 1850–1900
Inv. no. 20032111

Unknown, 1850–1900
Inv. no. 20032174

Unknown, 1850–1900
Inv. no. 20032110

Unknown, 1875–1900
Inv. no. 20032086

Unknown, 1855–1900
Inv. no. 20032211

Unknown, approx. 1880
Inv. no. 20032220,
20032221

Unknown, 1850–1900
Inv.nr. 20032093

Unknown, 1930–1960(?)
Inv. no. 20032120,
2003215

Unknown, 19th century (?)
Inv. no. 20032225,
20032226

Unknown, 19th century (?)
Inv.nr: 20032227,
20070028

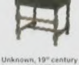
Unknown, 17th century (?)
Inv. no. 20032230

Unknown, 19th century
Inv. no. 20032088
Unknown,

approx. 1700 (?)
Inv. no. 20032090

Unknown, 1625–1675 (?)
Inv. no. 20032103

Unknown, 19th century (?)
Inv. no. 20032108


Unknown, 19th century
Inv. no. 20032028,
20070029

Unknown,
approx. 1860–1880
Inv. no. 20032238

9 789064 506192

Unknown, end 19th
century
Inv. no. 20032223